PROVINCE OF NE NDLAND, CANADA

ANNUAL REPORT

DEPARTMENT OF ENVIRONMENT AND LANDS

for the

Fiscal Year ended March 31, 1991

Hon. Patricia A. Cowan
Minister
Department of Environment and Lands

93-02068/

Minister of Environment and Lands
Province of Newfoundland
September 16, 1992

To His Honour Frederick W. Russell, C.M., LL.D.
Lieutenant-Governor of the Province of Newfoundland

May it please your Honour:

It is my privilege to submit the Annual Report of the Department of Environment and Lands, Government of Newfoundland and Labrador, for the fiscal year ended March 31, 1991.

Respectfully submitted,

Patricia A. Cowan

Patricia A. Cowan
Minister

Deputy Minister of Environment and Lands
Province of Newfoundland
September 16, 1992

Honourable Patricia A. Cowan
Minister of Environment and Lands

Dear Madam:

I have the honour to present to you the Annual Report of the Department of Environment and Lands, Government of Newfoundland and Labrador, for the fiscal year ended March 31, 1991.

Respectfully Submitted,

John M. Fleming
Deputy Minister

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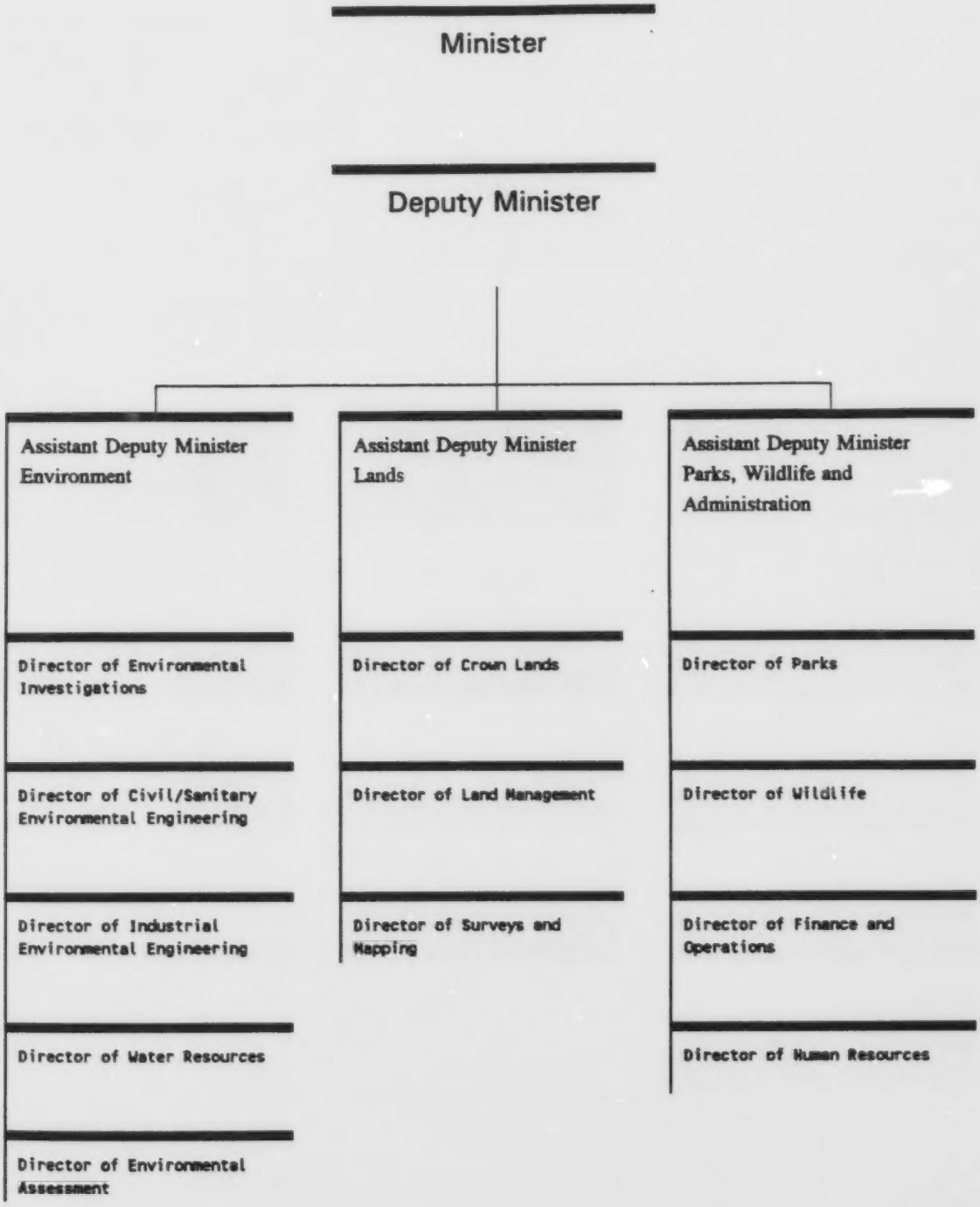
FORWARD

The Department of Environment and Lands is responsible for the protection and enhancement of the environment, controlling air, water and soil pollution and managing the water resources of the Province. The Environment Branch's functions include the development and implementation of appropriate water resource management policies, environmental impact assessments of major development projects, industrial/domestic waste disposal, as well as the regulation and control of pesticide storage, use, transportation and disposal.

The Department is also vested with the responsibility for the management, allocation and development of Crown Land for the economic and social benefit of the Province. This includes mapping, surveying and registration of all Crown Lands.

The Department's responsibilities also incorporate the management and protection of the Province's wildlife resource. Further, through a network of provincial parks, the Department provides residents and visitors with opportunities for outdoor recreational pursuits. The mandate includes the preservation of our unique natural heritage resources through the Wilderness and Ecological Reserves Program.

ORGANIZATIONAL CHART


Minister
Deputy Minister
Assistant Deputy Minister Environment
Director of Environmental Investigations
Director of Civil/Sanitary Environmental Engineering
Director of Industrial Environmental Engineering
Director of Water Resources
Director of Environmental Assessment
Assistant Deputy Minister Lands
Director of Crown Lands
Director of Land Management
Director of Surveys and Mapping
Assistant Deputy Minister Parks, Wildlife and Administration
Director of Parks
Director of Wildlife
Director of Finance and Operations
Director of Human Resources

LEGISLATION

The total complement of legislation administered by the Department during 1990/91 comprises the following:

ENVIRONMENT BRANCH

1. The Department of Environment and Lands Act

Regulations

- Mobile PCB Destruction Facility Regulations, 1989
- The Prevention of Misfuelling of Light Duty Vehicles Regulations, 1986
- The Storage and Handling of Gasoline and Associated Products Regulations, 1982
- Air Pollution Control Regulations, 1981
- The Environmental Control (Water and Sewage Regulations), 1980

2. The Environmental Assessment Act, Ch. 3, 1980

Regulations

- The Environmental Assessment Regulations, 1984

Amendments

- An Act to Amend the Environmental Assessment Act, Ch. 51, 1983

3. The Pesticides Control Act, Chapter 52, 1983

Regulations

- The Pesticides Control Regulations, 1984
- The Pesticides Control Act (Licensing) Regulations, 1978

4. The Waste Material (Disposal) Act, 1973

Regulations

- The Storage of PCB Wastes Regulations, 1988

Amendments

- An Act to Amend the Waste Material (Disposal) Act, No. 63 of 1975-76

5. The Waters Protection Act, Chapter 394

6. The Well Drilling Act, Chapter 14, 1981

Regulations

- The Well Drilling Regulations, 1982

LANDS BRANCH

1. The Abandoned Lands Act
2. The Administration and Control of Lands of the Crown (Transfer) Act
3. The Crown Grants Proceedings Act
4. The Crown Lands Act
5. The Development Areas (Lands) Act
6. Labrador Lands (Reservation) Act

7. The Land Development Act

8. The Newfoundland Geographic Names Board Act

9. The Reservation of Lands to the Crown Act

10. The Unimproved Lands (Redistribution) Act

11. The Veterans Land Settlement Act

PARKS BRANCH

1. The Provincial Parks Act

2. The Wilderness and Ecological Reserves Act

WILDLIFE BRANCH

1. The Wild Life Act, The Revised Statutes of Newfoundland, 1970, Ch. 400

   Regulations

   - The Wildlife Regulations, 1984

FINANCIAL AND GENERAL OPERATIONS DIVISION

Mr. Frank Harris - Director

INTRODUCTION

This division is responsible for the co-ordination and implementation of government administrative policies. This responsibility includes control, management and regulation of all financial and administrative aspects of the various divisions of the department. The division includes an Accounts Payable Section, Accounts Receivable Section and a General Operations Section. The duties applied to each section are provided by a permanent staff complement of thirteen and temporary assistance when required. The activities of the division are governed by the Financial Administration Act, the Public Tender Act, The Purchasing Policies and Procedures, and Travel Regulations.

PROGRAMS AND ACTIVITIES

A) ACCOUNTS PAYABLE SECTION

This section is responsible for the receipt and checking of invoices and travel claims to ensure that they comply with government's Purchasing and Financial Regulations, and the processing of these documents through the Department of Finance's computerized Financial Management Information System. This section's mandate is to achieve government's objective of processing payables within a 30 day period. Staff changes and restructuring make this a difficult task, but a concerted effort is being made to maintain this objective on a monthly basis.

B) ACCOUNTS RECEIVABLE SECTION

This section is responsible for the collection and control of revenue derived from services provided by the department. Revenue in the amount of approximately $5 million is collected annually. This revenue is generated through the sale of fish and game licences, park permits and fees, topographical and air photo maps, and rental fees on Crown Land permits and leases. Staff are tasked with the responsibility of collecting revenue on a timely basis as per procedures outlined in the Government's Accounting Instructions.

C) GENERAL OPERATIONS SECTION

This section is responsible for the co-ordination, control, and provision of the internal administrative support services within the department including office administration, transportation services, inventory control, communication services, and records management services.

The following table summarizes some of the activities of the Financial and General Operations Division including budget, information processed, revenues generated and permits and licenses sold.

1990/91 STATISTICS	
Gross Budget (Department)	$23,279,400
Revenue - Related	$1,848,800
Net Budget	$21,430,600
Invoices Processed	17,600
Vouchers Processed	8,600
Imprests Processed	185
Travel Claims Processed	1,700
Revenue - Wildlife (Current Account)	$2,622,000
Revenue - Parks (Current Account)	$641,000
Revenue - Crown Lands (Current Account)	$1,540,000
Park Permits Issued	114,000
Big Game Licenses Issued	23,000
Small Game Licenses Issued	34,000
Crown Lands Leases/Permits Issued	19,000
Salmon and Trout Licenses Issued	22,500

FUTURE GOALS/OBJECTIVES/TRENDS

The division will be undertaking detailed studies of its entire operations, especially the Accounts Receivable Section, with an eye towards computerization of operations wherever possible. These studies will especially concentrate on the Crown Lands and Small Game Licensing systems as well as the division's vehicle management systems and a proposed inventory system.

It is recognized also that staff of the division will require specialized training or upgrading in all aspects of microcomputer applications in relation to the division's functions. It is planned to secure approval of electronic data processing (EDP) training funds in the budget process to enable selected staff to acquire the necessary computer training at one of the colleges offering a certificate program in microcomputer applications for business.

This conversion to computer systems and training of staff can enable the division to carry out its function more efficiently, providing more accurate and current information for use by management.

HUMAN RESOURCES DIVISION

Ms. Catherine Mullins - Director

INTRODUCTION

The Human Resources Division is responsible for the management and administration of the department's human resource management programs as well as payroll and benefits functions. The division's authority to carry out its mandate includes the enforcement of the personnel administration procedures, payroll procedures, various collective agreements, staffing under delegated authority of The Newfoundland Public Service Commission Act, 1973, and various Minutes in Council and Treasury Board Authorities.

In 1990/91, the department had a seasonal peak of approximately 700 employees in 40 different communities and 44 provincial parks throughout the province. The total departmental salary budget for 1990/91 was $13,501,000.

The division currently has 6 staff, all located at head office in St. John's. The programs and services administered by the Human Resources Division can be broken down into the following categories:

PROGRAMS AND ACTIVITIES

A) PAY AND BENEFITS

In 1990/91, the payroll section of the Human Resources Division processed approximately 2,566 payroll action memoranda and 2,517 overtime and special payment reports. This included 424 staff hirings, 396 terminations, and approximately 129 travel time credit accumulation and request for compensation claims.

B) RECRUITMENT

During 1990/91, approximately 345 requests for staff appointment were processed by the Human Resources Division. These requests resulted in 111 competitions of which 86 were chaired by the Human Resources Division and 25 were processed through the Public Service Commission.

In addition to the recruitment of permanent, temporary and seasonal employees, 103 students were hired for provincial parks and 14 for other divisions.

C) CLASSIFICATION

There were 45 requests for classification referred to Classification and Pay Division of Treasury Board during 1990/91. Seven of these requests were for management positions and 38 were for bargaining unit positions. The review resulted in changes to 12 of the bargaining unit positions.

D) TRAINING AND DEVELOPMENT

In 1990/91, the division hired a temporary administrative officer for a six month period to coordinate a Training Needs Assessment Program within the department. The objective of the program was to assist employees in identifying areas where they required additional training and to assist in obtaining training in at least one area identified.

During the year, workshops were conducted for approximately 80 percent of the classifications within the department which assisted employees in identifying their needs.

FUTURE GOALS/ OBJECTIVES/ TRENDS

The Human Resource Division is in the process of developing a staff management policy. This policy will outline a manager's responsibility in the areas of organizational structure and position classification, recruitment, orientation and communications, ongoing orientation and communications, supervision, training and discipline. It is anticipated that the policy will be ready to deliver to staff in fiscal year 91/92.

The division also plans to develop an orientation package for new employees coming into the department.

ENVIRONMENTAL INVESTIGATIONS DIVISION

Mr. Carl Strong - Director

INTRODUCTION

The Environmental Investigations Division is responsible for the enforcement of The Waste Material (Disposal) Act and its regulations. This involves monitoring of commercial, municipal, and special wastes and ensuring that they are disposed of in an environmentally acceptable manner. The Division is also responsible for processing applications for fuel storage systems and providing inspections for these systems. Other activities include the spill response program, monitoring livestock developments, and the processing of small scale development referrals and assessment requests.

The Division has five Regional Offices: Labrador Region (Goose Bay); Western Region (Corner Brook); Central Region (Grand Falls); Clarenville Region (Clarenville); Avalon Region (St. John's). The Headquarters Office is located at the Confederation Building, St. John's. The Division has a total of twenty-two permanent staff members.

PROGRAMS AND ACTIVITIES

A) INVESTIGATIONS SECTION

1990/91 proved to be a very busy year for this Division with duties involving the processing of referrals and applications for developments such as waste disposal sites, farms, septic tank systems, and hydrocarbon storage systems, responding to more than 500 environmental emergencies such as oil leaks and other hazardous materials spills, and dealing with thousands of complaints and inquiries.

Particularly prominent inquiries during 1990/91 concerned waste dumping and wrecked/abandoned vehicles, recycling activities, and the provision of advice on the disposal of small quantities of special wastes.

During the year, 90 commercial and municipal waste management systems were issued Certificates of Approval. Two hundred and ninety approvals were issued for hydrocarbon storage tank systems and 24 small sewage disposal systems were licensed. A total of 404 approvals were issued for the year. Over 90 percent of Newfoundland municipalities and other local jurisdictions held valid waste management system Certificates of Approval in 1990/91.

One of the goals of the division is the reduction in the number of waste disposal sites required in the province. The Investigations Division provided technical and advisory support to the Department of Municipal and Provincial Affairs while the department commissioned a solid waste management study for the Botwood area.

A second study was undertaken to identify an appropriate regional incinerator site for the Port Rexton area. Problems with two existing waste disposal sites in the area have led to public demand for their closure.

The Investigations Division has continued its involvement in the construction of four short-range radar sites along coastal Labrador. The sites, owned by the Department of National Defence, are expected to be completed by the end of 1992.

The Labrador Regional Office of the Investigations Division monitors the radar sites and represents the department on a number of issues ranging from environmental surveillance to final rehabilitation.

Divisional staff assisted the Civil/Sanitary Environmental Engineering Division in the community consultation phases of the Central Burin Peninsula Waste Management Study. Final recommendations for a regional site location will be submitted in 1991/92.

PCB contamination of a scrap yard property at Makinsons has been confirmed. The property has been listed as "orphaned" with the National Contaminated Sites Remediation Program, through which clean up funding will be made available starting in 1991/92. Local residents were briefed on the status of the project.

Attempts to solve the Western Bay area waste management issue are continuing. Unincorporated communities in Conception Bay North have waste disposal services provided by local waste disposal committees. Disposal sites operated over a period of two decades no longer have the capacity to receive wastes and require closure. Alternative sites have been reviewed and one suitable site to serve the entire area has been selected. This site, however, is in a blueberry management unit and its use for waste disposal is opposed by the Department of Forestry and Agriculture.

B) ENFORCEMENT SECTION

Increasing public awareness of environmental issues has contributed to greater demands for increased enforcement of environmental legislation. The Enforcement Section continued its efforts in enforcement of The Waste Material (Disposal) Act. A total of twenty-three prosecutions were undertaken against individuals and companies who violated the Act by littering, dumping or abandoning waste material contrary to requirements, or by non-compliance with Ministerial Orders to handle the disposal of waste material in an environmentally acceptable manner. Additionally, the Enforcement Section continued to provide assistance under The Small Claims Act to waste disposal committees in the province, to collect outstanding waste disposal fees.

Eleven prosecutions under The Storage and Handling of Gasoline and Associated Products Regulations were undertaken against a number of firms in the province who failed to abide by the regulations which govern the installation and operation of hydrocarbon storage systems in the province. Thirteen individuals and companies were prosecuted under The Department of Environment and Lands Act for violations involving water bodies, and installation of septic systems without Ministerial approval, and one individual was prosecuted under The Criminal Code of Canada.

The prosecutions database system, developed in 1989 by the Environmental Enforcement Section, continued to grow to the point where it now contains 250 records on prosecution cases. This database, which was demonstrated to environment departments in the other Atlantic provinces, has now been adopted by those provinces, as a means of providing timely and efficient information on environmental cases which have gone before the courts. The concept of the prosecutions database has been expanded to include a Littering Notification System, a Wrecked/Abandoned Vehicle Notification System, a Ministerial Orders System, and an Arrears Notification System for the collection of outstanding debts to waste disposal committees.

C) MARINE SPILLS PUBLIC REVIEW

The Public Review Panel on Tanker Safety and Marine Spills Response Capability, also known as the "Brander-Smith Panel", which included Newfoundlander Stan Tobin, was appointed by the Prime Minister after two major Pacific Coast tanker accidents. The Panel published its findings in September 1990.

The Investigations Division led departmental input through the information gathering and evaluation stages of the review. Divisional staff are now involved with response to recommendations and comments on proposals by Transport Canada and Environment Canada to implement measures to prevent the release of petroleum and chemicals into the marine environment, and to increase local response capability.

D) WASTE MANAGEMENT CONFERENCE

Newfoundland hosted, for the first time in its 12 year history, the Canadian Waste Management Conference, with the Investigations Division playing a major role on the Conference organizing committee. The Conference took place in St. John's from October 3rd - 5th at Hotel Newfoundland, with technical tours on October 2nd.

The theme of the Conference was "Is NIMBY a Solution?... Let's Work Together". The NIMBY (Not In My Back Yard) reaction is one of the most important factors in the siting of critically-needed facilities to manage municipal and industrial waste. The Conference was held to promote discussion of various approaches in meeting this challenge. The 12th Canadian Waste Management Conference was a great success and afforded scientists, engineers, technicians, plant operators, managers, students, municipal leaders, and the general public the opportunity to meet and discuss one of the most complex waste management issues facing society today.

Particularly relevant to Newfoundland and Labrador were papers on the composting of fish wastes, litter reduction, the Goose Bay PCB Incineration Project, the siting and operation of the pit incinerator serving the area of Conception Bay from Perry's Cove to Cupids, and household hazardous waste disposal. Also included in the agenda was a seminar by the Canadian Portland Cement Association which demonstrated that their kilns are able to safely destroy special waste such as tires, PCBs and solvents, while utilizing the BTU value from their combustion. The conference registrants included residents of New Zealand, Germany, Norway, the United States and every area of Canada.

E) STATISTICS

The following statistics are shown to indicate some of the responsibilities handled by the Environmental Investigations Division over the past year:

Referrals	996
Certificates of Approval	404
Spills Reported*	506
Complaints and Inquiries	>10,000

* Promulgation of **The Storage and Handling of Gasoline and Associated Products Regulations** in 1982 makes it an offence not to immediately report a spill of more than 70 litres to the following 24-hour service:

SPILL REPORT

722-2083 (collect)

CANADIAN COAST GUARD
ENVIRONMENT CANADA
NEWFOUNDLAND ENVIRONMENT
ST. JOHN'S

CIVIL AND SANITARY ENVIRONMENTAL ENGINEERING

Mr. Ken Dominie - Director

INTRODUCTION

The Civil/Sanitary Environmental Engineering Division is charged with the responsibility of ensuring that all municipal infrastructure systems are designed, constructed and operated in accordance with departmental legislation and proper environmental practices. The division also collects and assembles information on sanitary conditions in incorporated and unincorporated communities for input into the Provincial Municipal Capital Works Program. In addition, the division also provides technical assistance to other divisions of the Department on matters relating to on-site sewage disposal, solid waste disposal systems construction and operation, and heavy civil engineering works. The division's authority to carry out its mandate is derived from the Department of Environment and Lands Act, Sections 23 and 24, and the Water and Sewer Regulations promulgated under that Act.

The division currently has 7 staff, 5 of which are located at headquarters in St. John's and one each in the regional offices at Grand Falls and Corner Brook. For the most part the staff are sanitary engineering oriented with the exception being the training coordinator position, which combines engineering and educational skills. The permanent staff are supplemented by student assistance as necessary.

PROGRAMS AND ACTIVITIES

A) WATER AND SEWAGE PROJECT ASSESSMENT AND INSPECTION

Sections 23 and 24 of the Department of Environment and Lands Act require that the Minister approve any water and sewer projects before they are undertaken. During 1990/91, 210 projects were recommended for approval to the Minister. For the most part, new systems were sponsored by municipalities through the Department of Municipal and Provincial Affairs or directly from municipalities and unincorporated areas as a result of funding assistance from federal employment programs. The above noted approvals do not include on-site sewage disposal systems which were implemented after receiving direct input from other divisions in the department. With respect to on-site sewage disposal for land assemblies, the division was given the responsibility of assessing the suitability of such developments in 1990/91. This function was previously carried out by the Environmental Investigations Division.

B) Sewage Treatment Plant Monitoring and Inspection

Currently, there are approximately 85 sewage treatment plants in the province serving a variety of installations such as municipalities, schools, service stations and camping grounds. It is the division's policy to inspect each sewage treatment plant in the province at least three times a year and to sample the influent and effluent on at least one of these visits. While the lack of manpower has prohibited this schedule from being met, the division is generally aware of operating conditions of all plants.

C) Operator Training

The operator training program continues to progress with new course material being developed and delivered. During 1990/91, a number of training sessions were held with topics covering: sewage treatment, cross-connection control, water quality control, hydrant maintenance.

Also during the year, new manuals were produced on "Chlorination of Potable Water Supplies" and "Hydrant Maintenance". A manual is under production on "Pipeline Maintenance and Water Quality Control". The division continues to be represented on the Atlantic Canada Voluntary Certification Board for Operators. Information on this program has been distributed to municipal operators throughout the province and several have applied for certification. The number of operators applying for certification is expected to increase once the certification information is spread formally and informally among operators.

SPECIAL ASSIGNMENTS

A) Federal/Provincial Sub-Committee on Drinking Water

The division represents the province through the Department of Health on the Federal/Provincial Sub-Committee on Drinking Water. The committee is charged with the responsibility of setting guidelines for physical, chemical and bacteriological characteristics of drinking water. The committee reports to the Federal/Provincial Committee on Occupational and Environmental Health and meets approximately twice per year.

B) Committee on Alternative Servicing Techniques

The rising cost of providing water and sewer services to the many rural communities in the province has prompted government to establish a committee to investigate alternative means of doing so. The committee is comprised of officials from the Departments of Municipal and Provincial Affairs, Health, and Environment and Lands. Work is progressing on this project with the first steps being to conduct a literature search and contact other Canadian jurisdictions.

C) CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT (CCME)

This Council underwent a restructuring in 1990/91 which saw the establishment of 2 Senior Advisory Committees - the Strategic Planning Committee and the Environmental Protection Committee. The director of Civil/Sanitary Environmental Engineering represents the department on the Environmental Protection Committee (EPC). In addition to sitting on this Committee, the director also represents the Department (and EPC) on two Task Groups established by CCME: (i) the Communications Strategy and (ii) Economic Instruments Task Groups.

D) ATLANTIC COASTAL ACTION PROGRAM

The federal government, through its Green Plan, has established the Atlantic Coastal Action Program to develop remedial action plans for selected harbours in Atlantic Canada that have been adversely affected environmentally. St. John's and Humber Arm have been identified to date as candidate sites for study. An advisory committee has been established for the Humber Arm Project with the director as co-chair and a similar group will be established for St. John's with the director representing the Department.

In addition to representing the department on the two project committees, the director also sits on an advisory committee for the program with the task of advising the Regional Director General of Environment Canada in Halifax on the progress of the program.

FUTURE GOALS/OBJECTIVES/TRENDS

In order to address the many problems and concerns that will face the division in the near future, it is felt that several initiatives are necessary:

- Develop new and expand upon existing databases on drinking water quality, impacts of urbanization on surface and groundwater, levels of services available in communities, and sanitary conditions in communities.
- Develop a strong association with operators of municipal water and sewer systems so that environmental concerns become a part of every day operations.
- Develop a long term strategic plan for domestic sewage disposal for the province.
- Develop policy and improve technical guidelines for evaluation of unserviced land developments.

INDUSTRIAL ENVIRONMENTAL ENGINEERING

Mr. Derrick Maddocks - Director

INTRODUCTION

The Industrial Environmental Engineering Division has five main mandates:

1. The division is responsible for monitoring, negotiating and enforcing compliance with provincial regulations by all industry. The division also drafts guidelines, codes of practice and legislation to minimize environmental damage by industry. Present staffing is two senior engineers and three engineer II's.

2. The division fulfils the province's commitments under the Canada/Newfoundland Agreement Respecting a Sulphur Dioxide Reduction Program and subsidiary agreements. This is accomplished by a continuing program to monitor acid rain, by negotiating and working with industry to reduce fuel consumption and the sulphur content of fuels, by maintaining an inventory of SO_2 emissions and by liaising with the federal and other provincial governments. Present staffing is one environmental laboratory chemist.

3. The division conducts air, water and soil quality monitoring. Programs have been carried out to monitor specific industrial pollution as well as general community pollution and background pollutant levels. Monitoring has often been conducted in co-operation with Environment Canada. Present staffing is one environmental monitoring specialist and one technician who also assists the environmental laboratory chemist.

4. The division provides expert knowledge to the department, other departments and the public pertaining to chemistry, hazardous chemicals and wastes. Present staffing is one environmental chemist who also supervises the environmental laboratory chemist, environmental monitoring specialist, and a technician.

5. The division liaises with other environmental agencies, and is this province's contact point concerning fuel regulations, industrial effluent regulations, toxic substances, air quality and various atmospheric environmental concerns, e.g. acid rain, NO_x and VOCs, CFCs, climate change and energy conservation.

Additional staff includes the director, one statistician and one word processor equipment operator.

PROGRAMS AND ACTIVITIES

The division's authority to carry out its mandate comes from An Act Respecting The Department of Environment and Lands, The Environmental Control (Water and Sewage) Regulations, 1980, and The Air Pollution Control Regulations, 1981. In addition, the Division is responsible for the enforcement of The Storage and Handling of Gasoline and Associated Products Regulations, 1982, and the enforcement of The Prevention of Misfueling of Light Duty Vehicle Regulations, 1986. The division has two main programs: compliance and monitoring.

A) COMPLIANCE

- *Pulp and Paper Industry*

The division continued to work closely with Corner Brook Pulp and Paper to ensure adherence to the terms of the Compliance Agreement. The Total Suspended Solids (TSS) were reduced 20% from April to March. The company is delayed in meeting the Compliance Schedule level of 11.0 kg/t (June 1990). Due to economic difficulties, the company was granted a year extension for completion of the bark boiler project.

The request of Abitibi Price in Grand Falls to extend the Environmental Improvement Agreement (September 30, 1991) was refused. The TSS in the effluent discharge into the Exploits River continued to be well above the Improvement Agreement level of 13 kg/t. Progress will continue toward completing the conditions of the Environmental Agreement. Recent and planned improvements, e.g. Dissolved Air Flotation unit (DAF), sewers diversion and chipping in the woods should decrease the TSS.

The effluent discharge from Abitibi Price in Stephenville continued to be below the requirements despite an increase during the year. That increase was caused by the starting of the Nutrients Treatment System, which appears to be keeping the toxicity of the effluent below the federal regulations. The attempts to by-pass the settling pond, to minimize the temperature loss, did not work well. The company was advised to improve the TSS controls at the primary sources to be able to discharge the effluent directly into the lagoon.

The division continued to participate in the development of the new Pulp and Paper Regulations by Environment Canada and will work closely with it on enforcement.

- *Mining Industry*

The division continued to work closely with Hope Book Gold Mine to mitigate the problems it encountered because of the inadequacy of its initial effluent treatment plant (ETP). The new ETP (SO_2 System) started in mid January. Start-up problems were encountered which caused poor performance into March. Although the cyanide level was improving, the copper content continued to be above the limit. The combination of the adequacy of the initial ETP along with the start-up problems of the new plant resulted in high contaminant levels in both the tailings pond and Pine Pond.

Progress was achieved with the Iron Ore Company of Canada by its vegetating 69 acres so far in the tailings disposal area and in developing an effective tailings plan. The company is committed to starting a monitoring program for mills 9 and 10 (stack emission), which should start in the fall of 1991.

Negotiations continued with Wabush Mines on developing an effective tailings plan concerning vegetation and dykes construction. The company is committed to submitting a plan in early 1992.

The tailings impoundment area was improved at St. Lawrence Fluorspar Mine in the fall. Unfortunately, the operation was shut down in November due to marketing difficulties. The division is expected to be involved when the property is mothballed.

Monitoring of the rehabilitation at Newfoundland Zinc and Asarco in Buchans continued. The objective is to ensure environmentally safe abandonment.

Close observations of new operations, including exploration work, continued to ensure that these operations meet all required standards. These operations include Aurion Minerals, The Newfoundland Resources and Mining Company, Teranov Mining Corporation and Domtar Gypsum Mine.

The division participated in environmental assessment committees dealing with Dolphin's Cape Ray gold project, Noranda's Tally Pond copper/zinc project and Asbestos Waste Disposal at Baie Verte.

- *Asphalt Plants*

During the 1990 paving season, the department issued 43 Certificates of Approval for Asphalt Plant Operation. Each prospective site was visited by department personnel before an approval was issued (or refused). Although not all operating asphalt plants were visited, an effort was made to visit asphalt plants on a more regular basis to ensure compliance with the Certificate of Approval conditions and department regulations. As a result, there are now more self-dyked fuel tanks in use and former plant sites are left in a clean condition. Operators and personnel of asphalt plants are now more conscious of the environment due to department personnel becoming more visible in the field.

Once the paving season had come to an end, the procedure of issuing Certificates of Approval for asphalt plants was reviewed along with the Environmental Code of Practice for Asphalt Plants, initially developed in 1988. A new application form was created and the Code of Practice was revised to incorporate positive changes in reducing the risk of asphalt plant operation on the environment.

- *Fishmeal Plants*

In 1990, fourteen fishmeal plants operated in the province, and although resources did not allow all the plants to be visited, progress was made to bring the plants into compliance with departmental regulations. Plants on the Avalon and Burin Peninsulas, as well as in Baie Verte and on the South West Coast had effluent samples taken and are consequently looking at process changes to lessen their impact on the environment.

In Carbonear, a consultant's recommendations to modify the effluent discharge system and install a small air scrubber over the cooling area of the plant were implemented.

Plans are to continue efforts in this area during 1991 by obtaining more samples from plants around the province and increasing the level of communication with fishmeal plant operators.

- *Albright & Wilson, Americas*

In 1989/90 the division has actively participated in the environmental assessment process which the company has become involved in as a result of their decision to close the plant in the summer of 1989. The division has been responsible for implementing and maintaining a monitoring program of weekly visits to the plant to ensure that it is being maintained and that authorized decontamination activities are being carried out in an environmentally safe manner. Discussions with consultants and other parties with possible interests in the plant, its infrastructure and its location which might prove useful for other industrial endeavours, have also taken place.

- *Come By Chance Refinery (Newfoundland Processing)*

The refinery has continued to be within compliance with the department regulations and conditions of Certificates of Approval that have been issued. Monthly reports from sulphur dioxide monitors in the area showed that the readings were below the regulatory limits. Effluent from the refinery's waste treatment was also considered to be in compliance. The hazardous waste disposal site was operated effectively.

- *Hospital Emissions*

At certain times during 1990, the Industrial Environmental Engineering Division (IEED) received complaints from various residents of Newfoundland about air emissions from hospital stacks. The majority of these complaints were from people residing near the St. Clare's Mercy Hospital and The Salvation Army Grace General Hospital.

As a result of these complaints, several contacts were made with the chief stationary engineer of each hospital to determine if emissions could be improved. It was found that the burning of Bunker C or No. 6 oil, as a fuel for the boilers, together with overcapacity, may be the cause of the complaints of fallout on cars and houses. A smaller boiler which is able to burn more efficiently, considering the required load, is to be installed at St. Clare's and should provide some relief to area residents.

Both hospitals operate incinerators which also contribute to the emissions. Each of these incinerators is of an era when combustion products may not have been a significant design criteria. The incinerators make a large contribution to visible emissions in the area.

- *Newfoundland and Labrador Hydro*

The division's primary involvement with Newfoundland and Labrador Hydro during this year has been related to discussions concerning operational problems of an effluent treatment system at the thermal generating station in Holyrood. A consultant was retained to study the present system, characterize the effluent, and determine the necessary mode of treatment to ensure a non-polluting effluent. An engineering consultant was retained to design the physical plant which will be used to treat the effluent. It is expected that construction of a waste water treatment plant for the Holyrood facility will commence in 1991.

- *Site Inspections*

During the year of 1990/91, the division made over 400 site inspections.

B) MONITORING

- *Acid Rain*

Expansion and enhancement of the Newfoundland Acid Rain Monitoring Network has continued. Volunteers are the most important resource of this program. They operate samplers that open automatically whenever precipitation is falling and collect a sample of all precipitation that falls during the course of a week. Six monitoring sites are presently collecting precipitation year round. Samples from each site are analyzed by the staff of the Industrial Environmental Engineering Division and Environment Canada at the Environment Canada laboratory in St. John's. Improved samplers have been installed at all sites and quality assurance programs have been instituted in both the field and laboratory.

Excess sulphate expressed as kilograms/hectare/year indicates the severity of acid deposition in a particular area. A target deposition of 20 kg/ha/yr for the protection of moderately sensitive areas was agreed upon in the 1987 Canada Newfoundland Sulphur Dioxide Agreement. However, since most of Newfoundland is highly sensitive due to the low buffering capacity of the soil and underlying rock, 8 kg/ha/yr has been calculated as the critical load for Newfoundland. Deposition above this critical load can be expected to cause long term harmful effects on aquatic ecosystems.

The division hypothesizes that the major source of sulphate deposition in Newfoundland is long range transport from mainland North America. Protection of the Newfoundland environment from acid deposition clearly depends on limits of emission of sulphur dioxide by other provinces and the United States. However, until this year, our monitoring in the vicinity of the largest sulphur dioxide source in the province has been inadequate and we lack reliable data on sulphate and nitrate deposition on the Avalon Peninsula. Pollutants released from the Holyrood Thermal Generating Station increase the risk of harm to ecosystems on the Avalon Peninsula which are subjected to both long range transport from the mainland and local emissions. A monitoring site has been established at Salmonier Nature Park which should fill this data gap over the next few years.

- *Air Monitoring*

The air monitoring programs conducted by the division fall into three groups: industrial compliance monitoring, national programs, and special projects.

In several communities in the province, air quality is, or has the potential to be, degraded by industrial emissions. Routine ambient air monitoring is conducted by both the division and by industries in order to monitor compliance with the Air Pollution control Regulations. In Labrador West, the Iron Ore company of Canada and Wabush Mines conduct routine monitoring of suspended particulate in ambient air in residential areas. The division operates monitors in Labrador City. In Corner Brook the division measures both inhalable and total suspended particulate as well as continuously monitoring sulphur dioxide. Monthly and annual data reports on Corner Brook air quality are released to the public. Under direction from the division, Newfoundland Processing and Newfoundland Hydro monitor sulphur dioxide in ambient air at sites close to their respective operations at Come by Chance and Holyrood.

The division is active in national air pollution programs which measure urban air quality and the long range transport of ground level ozone. The division operates and maintains the St. John's station of the National Air Pollution Surveillance Network. At this location sulphur dioxide, carbon monoxide, nitrogen oxide, ozone, suspended particulate, lead and sulphate are measured in ambient air. Environment Canada publishes monthly and annual summaries of results from the entire NAPS network.

Ground level ozone has been recognized as the air pollutant of greatest concern to the health of Canadians. Increased monitoring of ozone and its precursors is mandated by the NO_x VOC Management Plan. This pollutant can be transported long distances and Newfoundland is vulnerable to pollution originating in Eastern Canada and the United States. A rural monitoring station is operated at Cormack and an additional monitor has been purchased for installation on the Avalon Peninsula. The division is a member of the Atlantic Regional Oxidants Working Group which coordinates ozone monitoring throughout the region.

Due to the high public profile of air pollution problems, the division has been as involved as possible in public education and awareness. Activities included:

- an auto emission clinic in St. John's
- school talks on acid rain
- attendance at monthly Corner Brook Environment Committee meetings
- Published a pamphlet "Air Pollution Atmospheric Change - A Newfoundland and Labrador Perspective
- Reprinted pamphlets from the federal government and other provinces on acid rain, air pollution, CFCs, and the greenhouse effect
- Planning for the establishment of an acid rain interpretation display at Salmonier Nature Park

In addition, the division directly responded to over 200 requests for information from the public, and at least as many that were directed through the public relations specialist. The division also investigated 66 complaints from the public.

C) Staff Development and Training

Staff development and training continued through review of technical journals and papers. In addition, staff members attended the following conferences or courses:

- Dbase courses
- Transportation of Dangerous Goods Regulations information session
- Canadian Institute of Mining, Metallurgy and Petroleum

SPECIAL ASSIGNMENTS

A) Working Group on Harmonization of CFC Regulations

The division has been active in the Federal Provincial Working Group on Harmonization of CFC Regulations. Over the past year the main activity of this group has been the preparation of an action plan for the recycling of CFCs. The division has conducted a survey of CFC and halon use and knowledge in Newfoundland and Labrador. This survey will be used to develop CFC programs that are relevant to both Newfoundland and Labrador and are compatible with the national goal of harmonization.

B) Come By Chance Hazardous Waste Sites

Waste sites left by the previous operator of the Come By Chance refinery are the responsibility of the Newfoundland and Labrador government. A project that will result in the ultimate clean up and permanent storage of the waste is ongoing. Once funds become available, a final decision on remedial action will be made.

C) Goose Bay PCB Burn

Although this project has been in the discussion stages for several years, this division's involvement has been at its peak this year. In conjunction with personnel from Environmental Investigations, divisional staff have also been involved in monitoring of the project through participation in the daily inspections of incinerator operations as well as through the review of incident reports, and proposed ameliorative actions, which resulted from several unexpected emission episodes.

Air monitoring in the vicinity of the PCB incinerator and in the community began during 1989 and was continued until the incinerator was removed. The project provided data on levels of air pollutants in the community and monitored compliance of the incinerator with provincial regulations. Samples were collected and analyzed with extremely sensitive equipment capable of detecting trace amounts of PCBs, polychlorinated dibenzo-dioxins, polychlorinated dibenzo-furans, poly-aromatic hydrocarbons, and other organic compounds in ambient air. Total suspended particulate and metals are also being measured. Timely sampling provided assurance that the two incidents that occurred at the incinerator did not lead to abnormal ambient air concentrations of these pollutants.

Air monitoring was completed. Ambient air monitoring by the division and by the DND consultant did not detect any violations of the provincial PCB regulations or the Air Pollution Control Regulations.

D) Corner Brook Air Study

This joint Environment Canada/Newfoundland Department of Environment and Lands project, initiated in the previous fiscal year, was continued in August, 1989, with intensive monitoring of airborne particulate at five sites. In addition to measuring total suspended particulate at all sites, the subfraction of particles small enough to lodge in the lungs was measured at three locations. Chemical analysis for both inorganic compounds and polyaromatic hydrocarbons is being carried out. The completion of data analysis of the results of this study will increase our knowledge of the levels, conditions, sources and health risks associated with particulate pollution in Corner Brook.

FUTURE GOALS/OBJECTIVES/TRENDS

With the ever-increasing interest in the environment, the obvious trend is towards greater involvement by this division.

The division expects to continue to press industry towards attaining compliance with regulations and will continue to work closely with Environment Canada especially in relation to the Pulp and Paper Effluent Regulations and the Metal Mining Liquid Effluent Regulations.

It is expected that the division will increase its involvement in public awareness including presentations to schools and other groups and the fielding of requests for technical information. This will obviously lead to an increased monitoring effort.

The division has recently assumed responsibility for several new areas including:

- NO_X and VOCs management plan
- Management plan for substances that deplete the ozone layer
- Climate change and energy conservation which are high profile items and will demand increased attention.

WATER RESOURCES MANAGEMENT DIVISION

Mr. Wasi Ullah - Director

INTRODUCTION

The Water Resources Management Division is responsible for the administration of the water related mandate of The Department of Environment and Lands Act, Waters Protection Act and The Well Drilling Act and the regulations under this Act. The responsibilities relate to allocation of water, approval of stream alteration works, protection of water supply areas, licensing of well drillers and other aspects of water resource management. In addition to regulatory responsibilities, the activities and programs of the division include the operation and maintenance of hydrologic networks, hydrologic and environmental impact studies, flood risk mapping, flood forecasting, hydrologic data processing and application of hydrologic models, etc.

The activities and programs of the division are developed and implemented by five sections headed by senior professionals having expertise in respective areas. The approved positions in the division consist of 10 professional, 10 technical and 2 secretarial staff. The field programs are assisted by students and part-time observers.

PROGRAMS AND ACTIVITIES

A) SURFACE WATER SECTION

The responsibilities of this section include the administration of federal-provincial agreements dealing with the hydrometric and climatological networks, planning and operation of the provincial hydrometric network, protection of water supply areas, regional water resources studies, water resources assessment, and hydrologic impact studies. This section consists of a water resource engineer, two regional watershed quality officers, and two water resources technicians. The field data collection programs are assisted by part-time observers, temporary employees and summer students.

- *Water Resources Assessment - Hydrologic Networks*

During the year, more than 90 stations were operated by the Water Survey of Canada and cost shared by the province under the Canada-Newfoundland Hydrometric Surveys Agreement signed in 1975. Thirty-two of these stations are equipped with data collection platforms for obtaining real-time data via a satellite. The provincial share of the cost during 1990-91 was approximately $285,000.

- *Humber River Basin Data Collection Network Agreement*

Under this Agreement, the Deer Lake Power Company and the department are cost sharing the installation and operation of 13 hydrologic data collection network stations in the Humber River Basin. Of these, four report water levels, temperature and precipitation data, three report temperature and precipitation data and the remaining six report water levels only. At the end of March 1991, most of the work required under phase one of the Agreement was completed. The total cost for the installation of the network was $187,500.

The Department of Environment and Lands maintains and operates the data retrieval and dissemination system using microcomputers. The data is transmitted from the sites via the GOES satellite to Washington, D.C. from where it is retrieved using a microcomputer and modem. To meet the terms of the Agreement, and to process the temperature and precipitation data, major changes were completed on the software used to retrieve and process the data and to make the data readily accessible by the Power Company.

- *Climatological Network Expansion Agreement*

This federal-provincial Agreement provides for the expansion of weather stations to provide rainfall and temperature data in areas where hydrometric stations have been established. Four new stations were added to bring the total to 71 (federal - 37, provincial - 34) under the Agreement. In addition to these stations, the federal government also operated 51 national network stations in the province which are classified as Schedule A1 stations under the Agreement. The provincial share of the cost during 1990/91 was $68,400. The station density on the Island (1.23 stations/1000 km^2) is now comparable to Nova Scotia (1.58) and New Brunswick (1.01).

- *Provincial Hydrometric Network*

The Provincial Hydrometric Network Program was initiated in 1979 with an objective to monitor streamflow from smaller drainage basins which are not adequately covered under the Federal-Provincial Hydrometric Survey Agreement. Two new stations were added during the year to bring the total to 14. The data summary was prepared and distributed to various users of hydrometric data.

- *Evaluation of the Hydrometric Network*

A federal-provincial study is being planned to evaluate the adequacy, reliability and distribution of existing hydrometric network stations. The results of the study will be helpful in the management of the network. A draft Terms of Reference is being prepared.

- *Regional Water Resources Study*

The Regional Water Resources Study of the Notre Dame Bay Area and Central Newfoundland Region was completed by a consultant during 1990-91. This was the fifth study in a series of studies which covered the Avalon Peninsula, Bonavista Bay area, and Northern Peninsula and Humber Valley area. These studies are designed to analyze the availability of water, present uses, future demands, supply-demand imbalances, water quality, water related problems, and the economic value of water as a resource. The report made specific recommendations to meet future demands and to minimize water use conflicts in the study area.

- *Protection of Water Supply Areas*

The protection of public water supply areas under Section 26 of The Department of Environment and Lands Act, 1989 is one of the main responsibilities of this section. This program consists of five main activities i.e. designation of water supply areas, water quality monitoring, surveillance of designated areas, water and land use inventory, and development of environmental protection guidelines and watershed management plans.

- *Designation of Water Supply Areas*

Sixteen new water supply areas were designated during 1990-91 to bring the total to 200 designated water supply areas. A brochure on "The Protection of Public Water Supply Areas in Newfoundland" was drafted which will be available for public distribution in 1991/92.

- *Water Quality Monitoring*

During the current year, spring and fall water quality samples were collected from 25 water supplies and analyzed for physical and chemical parameters to monitor water quality. Water quality data for such areas are stored in a computer based system for subsequent analysis to assess the impacts of development activities on water quality.

- *Surveillance of Designated Areas*

During 1990-91, regional watershed quality officers conducted over 130 investigations and recommendations were made to resolve the problems. These investigations were related to land and water use conflicts experienced in various designated areas. At present, the surveillance of designated areas is conducted only in response to complaints from community councils or individuals.

- *Water and Lands Use Inventory*

Preliminary information on land and water uses in designated areas was collected during 1990-91 by the regional watershed quality officers on an on-going basis. Water and land use data along with basin attributes such as basin area, stream length, area of lakes, area of bogs, etc. are stored in a database for mapping and assessing the impact of land and water uses on water quality.

- *Environmental Protection Guidelines and Watershed Management Plan*

Development plan guidelines were developed for forestry operation, agricultural development and aggregate extraction in protected water supply areas. Development plan guidelines for mineral exploration and recreational activities are being drafted. Watershed management plans are also being developed for a few selected sensitive watersheds.

- *Hydrologic Impact Studies*

A number of studies are in progress to evaluate the impacts of various development activities. The results of these studies are useful in developing environmental protection guidelines. The various completed and on-going studies are: hydrologic impacts of peat harvesting, impacts of recreational activities, impacts of forestry operations, impacts of agricultural development, and carrying capacity of lakes and ponds.

- *Water Quality Monitoring Agreement*

The Governments of Canada and Newfoundland and Labrador initiated a Water Quality Monitoring Agreement in April, 1986, in order to assess and protect aquatic resources in a coordinated and cost-shared manner. The Agreement evolved into a work-shared arrangement, with the 1990-91 program costs of $481,785 being shared 46% (federal), 54% (provincial).

- *Index Network*

Regular sampling of chemical/physical/hydrological variables continued during the year to provide long-term monitoring of representative sites throughout the province. The routine monitoring network currently includes 62 stations. During the year, 630 visits were made to these stations, samples were shipped to the National Water Quality Laboratory in Burlington, Ontario, and data acquisition and quality assurance proceeded in conjunction with Environment Canada Water Quality Branch, Moncton, New Brunswick.

- *Recurrent Network*

The 1990/91 Recurrent study sampled 58 stations in the Quidi Vidi watershed in St. John's and was designed to examine contaminant sources in this urbanized watershed. The Quidi Vidi study was also designed to provide a comparison to the Waterford River Urban Hydrology Study of 1980-84 and the Waterford River Recurrent Survey 1989-90.

- *Land Use Analysis and Mapping*

Although a GIS system has been installed in the Water Resources Division with supporting facilities in regional offices in Corner Brook and Grand Falls, delays in the revision and updating of the 1988 Site Documentation Report as a Basin Documentation Report have persisted. In part, slow progress is due to delays in receiving provincial NTS topographic series digital map files from other agencies. This task could be completed during fiscal 1991/92.

- *Data Analysis, Interpretation, Reporting*

The water quality data are being analyzed using standard statistical techniques to prepare interpretative reports. Reports compiled during the year include:

1990 Exploits River Survey Report: 1987-88
1990 Organochlorinated Pesticides and Polychlorinated Biphenyls in Water of Selected Newfoundland Rivers
1991 Bottom Sediment Survey Report: 1987-1989

B) GROUNDWATER SECTION

The Groundwater Section, consisting of one senior hydrogeologist as groundwater resource manager, one water well inspector, and a water resources technician, is responsible for the administration of The Well Drilling Act and Regulations under this Act, investigations of groundwater related problems, and the implementation of groundwater resource studies.

- *Water Well Drilling*

There were seven well drilling companies licensed to drill water wells in Newfoundland during the year. The number of well records submitted was 736. The number of well records on file is 10,000 of which 5500 were submitted since the Well Drilling Act was proclaimed. Each of these records represents a valuable piece of information concerning our groundwater resources. A new water well data publication for the years 1984 - 1990, containing 5300 wells, was completed using the dBase IV computer software. This data is available to government and private agencies for better development and management of this precious resource.

- *Groundwater Studies*

1. Effects of Farm Waste Disposal on Groundwater

A case study of the effects of farm waste disposal on groundwater was undertaken and completed in conjunction with the Faculty of Engineering and Applied Sciences of M.U.N. The study was funded under the Canada/Newfoundland Agri-Food Development Subsidiary Agreement and dealt with the verification of a bacteriological seal beneath a liquid manure lagoon located near St. John's. The study concluded that although the lagoon had caused some down-gradient groundwater contamination, the level of contamination was less than expected. It appears that dilution is the major factor in reduced contaminate concentrations with increasing distance from the lagoon.

2. Effects of Road Salt on Groundwater

A study on road salt contamination of groundwater in the Windsor Lake area was completed. This is a common problem in Newfoundland where road salt is used for deicing of highways for a greater part of the year.

3. Landfill Monitoring

Sanitary landfill studies at Terra Nova and Trout River Regional Waste Disposal Sites are ongoing to determine the environmental impact of these landfills on local groundwater and surface water. Both landfill sites have monitoring wells installed which are regularly sampled by department staff. The Terra Nova landfill site has so far caused substantial contamination of groundwater but only in the vicinity of the waste disposal cells. This is due to the relatively slow velocity of groundwater movement in the area. A report on this site is being finalized.

- *North Pond Brook Drainage Basin*

Natural seasonal fluctuations of the water table and groundwater quality in a small drainage basin are being assessed to obtain essential information for developing guidelines to assess subdivision applications where septic tank and wells are required. Since a septic system requires a minimum depth of unsaturated soil to operate, water table measurements of the area at one particular time of the year do not provide seasonal fluctuation information. Such measurements must be adjusted to represent normal high and low water table levels during the year.

- *Groundwater Observation Well Network*

An observation well network of six deep wells and one shallow well provided continuous record of piezometric levels for all the representative hydrostratigraphic regions of the province. The data determines the storage changes taking place in these regions and is useful in water balance calculations and for predicting drought conditions. Groundwater temperatures were being recorded at different locations throughout the province at different times of the year. This data was sent to the Department of Mines and Energy for the purpose of assessing the use of ground source heat pumps as a heating source in Newfoundland.

- *Groundwater Investigations*

During the year, the section responded to 145 requests pertaining to public and private groundwater concerns. These requests ranged from a need for well log information to a detailed study request for soil and groundwater investigation at suspected contamination sites.

C) HYDROLOGIC MODELLING SECTION

The Hydrologic Modelling Section is responsible for the development, evaluation, and implementation of techniques and methodologies, including hydrologic and hydraulic computer models to facilitate management of water resources, resolution of water related problems and resource planning. The responsibility covers areas such as hydrologic data analysis, water systems analysis, computer modelling of hydrological processes, electronic data processing, and special investigative projects and studies. The section is also becoming increasingly involved in the publication and distribution of educational information on the water resources of the province.

The Section consists of a water resources management engineer, a professional engineer, and a computer systems analyst who are assisted by staff or other sections as and when required.

- *Hydrologic Data Analysis*

The water discharge and level data collected for every day of every year of record at all hydrometric stations across Canada, including Newfoundland and Labrador, were made available by Environment Canada on CD-ROM (Compact Digital Read-Only Memory) storage. This database was installed on one of the sections's microcomputers. The system provides rapid access to huge volumes of water resource data for hydrologic data analyses.

Minimum flows recorded on 60 rivers on the Island were statistically analyzed and the results have been published in a technical report. Based on the results of the analyses, a computer program for estimating minimum streamflows on ungauged rivers was developed. The report and computer program are used by government regulatory agencies and engineering consulting firms for designing municipal water supply systems and assessing the technical feasibility of hydro plants.

Water quantity and quality data collected on the White Lake Pond Brook watershed near Corner Brook were analyzed to determine the environmental effects of logging activities on water resources. A preliminary technical report on the hydrological impacts has been produced. The results of this study will be used to develop measures for minimizing potential adverse environmental impacts of logging in sensitive watersheds.

Documentation of the environmental impacts of ditching peatlands at the peat harvesting sites in Bishop's Falls and St. Shotts, and of urbanization of the Newtown urban catchment, continued during the fiscal year 1990/91. The results are very useful for the regulatory functions of the division.

- *Computer Modelling of Hydrological Processes*

A main-frame computer model for simulating the formation and break-up of ice jams in rivers was modified for application on microcomputers. Flooding caused by blockage of flow by ice jams on Newfoundland's rivers occur relatively often. The suitability of the model for Newfoundland's climatic and hydrological conditions was assessed using streamflow and river ice data collected on the Exploits River. A significant amount of work remains to be done before the model can be operational.

A study, using satellite imagery and the division's Image Analysis System, was initiated to assess the impacts of the forest fires of April/May 1986 on water quantity and quality within the Leech Brook watershed. The use of satellite imagery, in combination with hydrological models, is expected to significantly increase the efficiency and accuracy of assessing pre and post-development land use changes and the corresponding impacts on the regional water resources.

- *Electronic Data Processing*

The software system used to retrieve and distribute near-real-time streamflow information to remote users, the Automatic Data Retrieval System (ADRS), is now in its fourth version. The upgrade was required to allow for the addition of new sensors and new report formats. This update was also a requirement of the cost sharing agreement that is in place with the Deer Lake Power Company Limited for the collection of hydrological and meteorological data. A total of 32 data collection platforms (DCPs) are now accessed by the system. A method was devised for monitoring access to our data distribution computer in order to track system usage. As an example, between January 28 and May 27, 1991, there were a total of 227 accessed to the data files from three external users: Deer Lake Power Company Limited, Abitibi Price Incorporated, and the Newfoundland and Labrador Canoeing Association.

During the past year, personnel from this section aided the Environmental Investigations Division by creating and supporting an automated data collection software system for the PCB Incinerator Project in Goose Bay, Labrador. The system allowed staff in the regional office to retrieve, process and graph data directly from a process control computer at the PCB incinerator site. This system was similar in many ways to the DCP data collection system.

As of 1990, the division started to use Hydronet electronic dataloggers for the tipping bucket rain gauges on the provincial hydrometric network. This required the creation of a series of programs to manage and analyze the data collected from these gauges and to generate the various types of reports used for data interpretation.

The Geographic Information System (GIS) SPANS was installed during the past year. An update to the SPANS software was received during 1990/91 and was added on the GIS microcomputer. Several data sets showing land use and water quality information were loaded into the system on large scale digital maps. The GIS, when fully operational, will significantly increase the efficiency of identifying areas of potential environmental problems and will help in the formulation and assessment of various management scenarios.

During 1990/91, the division completely switched to WordPerfect version 5.1 as the standard wordprocessing package. This involved upgrading the versions currently owned by the division and consisted of over 20 installations. Also, the division purchased five new microcomputer systems; three of which replaced older microcomputers and two were required for new staff members. The division also acquired three new printers this year; one laser printer and two dot matrix printers.

- *Technical and Information Services*

Technical expertise was provided in the assessment of several projects registered under the Environmental Assessment Act.

The Water Resources Newsletter, providing current information on river flows, reservoir levels, water quality, and river ice conditions, continues to be published every month for distribution to over 100 governmental and non-governmental groups.

Significant progress was made towards the production of the Water Resources Atlas of Newfoundland. With 32 full colour maps of the province and supporting texts, figures, and photographs, the Atlas will present detailed information on Newfoundland's geology, climate, rivers and lakes, water quantity, surface water quality, groundwater, and water uses by municipalities, industries, hydro plants, and recreationists. The Atlas will be a useful reference for engineers, planners, and other professionals involved in water-related projects, as well as a valuable source of information for the general public. It is expected to be published in 1991/92.

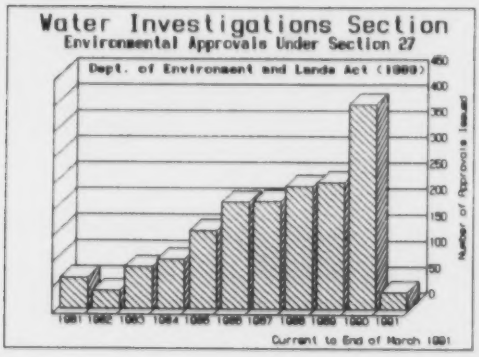
D) WATER INVESTIGATIONS SECTION

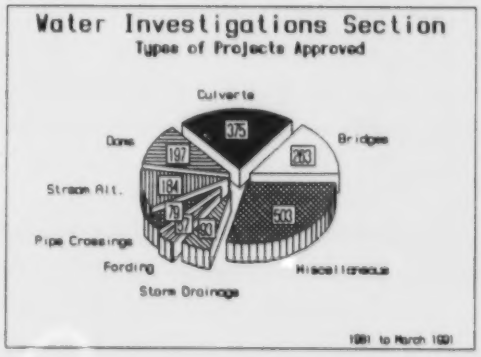
The Water Investigations Section is responsible for administering an approval process for all proposed alterations to provincial bodies of water, investigations of water related problems and complaints, providing technical services in the area of hydrological, hydraulic and environmental design of water related structures, undertaking studies of flooding, evaluating the impact of any kind of development on water resources and addressing dam safety issues.

The staff complement of the section is comprised of a water resources management engineer who supervises a flood studies engineer, a water resources technician and temporary staff and students.

- *Environmental Approvals*

The Section issued 379 Certificates of Environmental Approval in 1990/91 for such projects as bridges (35), culverts (70), dams (15), stream alterations (23), pipe crossings (28), fording (16), storm drainage (17) and 175 other water related projects under Section 27 of The Department of Environment and Lands Act, 1989.


Water Investigations Section
Environmental Approvals Under Section 27
Dept. of Environment and Lands Act (1989)
Number of Approvals Issued
Current to End of March 1991



- *Investigations/Inspections*

There were approximately 96 investigations conducted on various water related problems and recommendations made to resolve them. In addition about 132 referrals from other agencies were reviewed and various environmental assessment opinions were provided. The section continued to provide information to the public at a rate of over 1,100 phone calls per year.

Typical complaints about water resources matters that are brought to the attention of this section for investigation and resolution fall into two broad categories; namely, naturally occurring problems and problems resulting from activities carried out by others. The following list is typical:

Natural hazards

- flooding;
- ice jams, vegetation growth or other flow obstructions;
- erosion of stream banks (and loss of real estate);
- poor water quality, or insufficient quantity;

Human activities

- Infilling of shoreline frontage, watercourses, floodplains and wetlands;
- stream siltation caused by fording, construction, land clearing, forestry, utilities etc.;
- pollution of ponds, rivers, streams and groundwater aquifers;
- flooding caused by undersized bridges and culverts;
- road, driveway or property washouts;
- illegal activities including stream diversions, dams and crossings;
- surface drainage and ditching disputes;
- septic tank effluent into drinking water;
- activities of all types including camping in water supply areas;
- safety and repair of dams;
- damage to riparian lands and buffer zones;
- loss of aesthetics in recreational areas due to various activities;
- obstruction of right of ways (fences) along ponds and streams;
- destruction of wetlands by ATV's.

- *Canada-Newfoundland Flood Damage Reduction Program*

Glenwood/Appleton, Glovertown, Codroy Valley, Trout River and Bishop's Falls were designated, bringing the total number of areas designated in the province to 16. A new program video called "The Floodplain Belongs to the River", a floodproofing booklet and information brochure were produced as part of the Public Information Program.

The Flood Risk Mapping and Studies Agreement terminated in May 1990. Negotiations began on a new flood risk and studies agreement under an umbrella agreement for water resources management for economic development. This renewed agreement would include 15 new areas, require $1.25 million and take 5 years to complete.

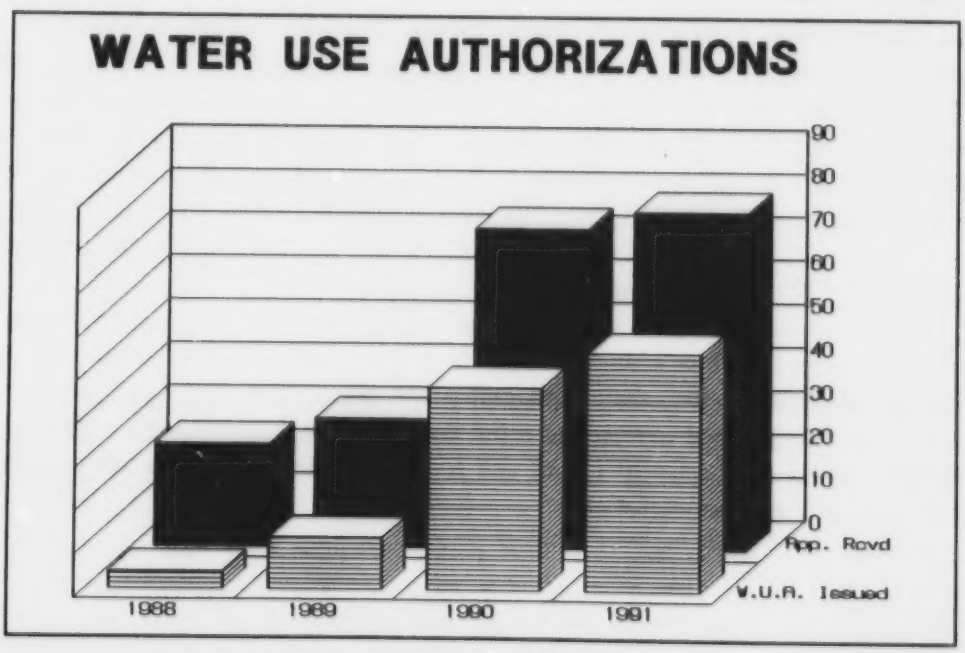
E) WATER RIGHTS SECTION

The Water Rights Section is responsible for the development of policies, procedures and methodologies for administering the allocation system for water extraction and water usage from water bodies within the province under Section 21 of The Department of Environment and Lands Act, 1989. It is also responsible to formulate and implement regulations and technical guidelines for optimum use of water and rational management of water resources of the province. The section is the most recent one to be independently staffed by a water resources management engineer.

- *Water Use Authorization*

Because of unexpected delay in the passage of the draft Water Resources Act, the department has established an interim system of water use authorization to allocate the use of water for various beneficial purposes including hydropower. This system has been developed in consultation with the Department of Justice and will be codified into a licensing system upon the passage of the draft Water Resources Act and all authorization issued will be confirmed by water use licences.

The section received 223 applications for water use authorization. To date 118 water use authorizations have been issued for various beneficial water uses under Section 21 of The Department of Environment and Lands Act while the others are under review for approval.



Twenty-five potential hydropower sites on the Island are being pursued by private developers. The total capacity of these sites is in excess of 110 MW with an estimated investment of $350,000,000, essentially all private funds.

- *Water Use Authorization- Guidelines For Hydropower Projects*

Generic guidelines have been prepared regarding application procedures for water use authorization for a hydropower project. These are intended to assist the proponents to prepare comprehensive project proposals so that applications can be processed in a relatively more efficient manner. Two sets of guidelines have been prepared for:

1. Preliminary Water Use Authorization: enables the proponent to secure priority for the water resource at the site, to secure data, carry out necessary feasibility studies required to file an application for the issuance of a water use authorization.

2. Water Use Authorization: to secure the water resource at the proposed site necessary for the operation of the project, and to secure the natural energy/ power potential of the site for a specified period of time.

- *Inventory of Existing Water Rights*

Substantial data base is being established which is necessary to determine whether potential conflicts might exist when water rights applications are received. Information has been collected about the uses for municipal, industrial, hydropower projects. There are some data gaps and this activity will continue next year. All municipal, hydropower and industrial users will be asked to register their current rights granted under various leases, Acts, grants or other provincial statutes.

- *Registry of Water Use Authorization*

The Registry of Water Use Authorization is being established to index and maintain copies of all registered water rights and authorized water uses. The amount of data is considerable and it is planned to store the entire document for each water use authorization on the data base system as permanent record and for easy retrieval. The existing water rights documents will be stored on microfiche.

- *Other Activities*

In addition to the implementation of the above mentioned programs and activities relating to the division's mandate, the professional and technical staff were also involved in other activities listed as follows:

- participation on environmental assessment and other committees
- assessment of referrals from other government departments and agencies
- review of technical reports
- preparation of technical/scientific papers for presentation/publication
- participation in seminars and speaking assignments on various aspects of water resources
- participation in environmental emergencies such as flooding, oil spills, etc.

F) STAFF DEVELOPMENT AND TRAINING

Staff attended academic courses, workshops, conferences and training sessions on dam safety, statistical methods in hydrology, hydrogeology, storm water management, water resources engineering and computer technology.

SPECIAL ASSIGNMENTS

A Bursary Program was established to train six graduate engineers (two/year) at a Canadian university during the next 4-5 years. No suitable candidate was available during the period under review

Government approved a contribution of $250,000 to the Rennies River Development Foundation towards the cost of the Freshwater Resource Centre. The second instalment of $50,000 was paid in 1990 - 91.

The Community of Victoria was granted $500 for a river stabilization project.

Substantial progress was made in the preparation of a Water Atlas for the province. Thirty-two plates have so far been completed or are nearing completion.

FUTURE GOALS/OBJECTIVES/TRENDS

Major effort will be concentrated on an interpretive analytical report of the first five years of index stations data, assessing baselines, variability, seasonal trends, and regional trends.

A major recommendation of the 1990-91 Annual Report of the Water Quality Monitoring Agreement was to expand monitoring activities in Labrador. Several federal initiatives, some new, mandating environmental monitoring in the Arctic will be explored to help facilitate this expansion.

Future plans for the Agreement will incorporate biomonitoring as a means of using indicator organisms to assist in the classification of streams and assessment of water quality. Diatom algae and rapid bioassessment procedures (incorporating metrics for diatoms, benthic invertebrates, watershed variables, and fish habitat) will be used. The goal is to add to the chemical and hydrological database by taking advantage of biological integrators of the environment to assess water quality baselines, variability, and trends from an ecological perspective.

The primary goals of the division continue to be the consolidation of existing water related legislation into a new Water Resources Act and the subsequent promulgation of water supply area protection regulations.

Increasing water use conflicts underscore the need to promote greater public awareness of the relationship between environmental protection requirements and the resolution of such issues.

Renewal of the Federal-Provincial Flood Damage Reduction Program to cover further unmapped flood prone communities is under consideration. Efforts will be made to negotiate and finalize the Agreement on water and economy to be cost shared 50/50 by the province and the federal government.

ENVIRONMENTAL ASSESSMENT

Ms. Colleen Leeder - Director (Acting)

INTRODUCTION

The Environmental Assessment Division is made up of three sections: Environmental Assessment, Environmental Impact Management, and Pesticides Control. The Environmental Assessment Section administers the Environmental Assessment process and coordinates the preparation of Environmental Impact Statements in accordance with the Environment Assessment Act, 1980 and Regulations (1984). The Environmental Impact Management Section is charged with undertaking surveillance inspections and with coordinating the monitoring and rehabilitation programs of projects under environmental assessment. The Pesticides Control Section is responsible for the regulation of commercial and restricted class pesticides in accordance with the Pesticides Control Act, 1983 and Regulations (1984).

The division has eleven staff, ten of which are located in St, John's and one in Corner Brook. For the most part, staff are trained in biology related disciplines.

PROGRAMS AND ACTIVITIES

A) ENVIRONMENTAL IMPACT ASSESSMENT SECTION

The Environmental Impact Assessment Section administers the environmental assessment process. In 1990/91, 191 referrals were processed, leading to 45 registrations. Of the undertakings registered, 3 required the preparation of an Environmental Impact Statement (EIS), 6 required the preparation of an Environmental Preview Report (EPR), and 36 were released from further assessment. One EIS and one EPR were completed:

1. Penetanguishene Trunk Sewer Environmental Impact Statement.
   (Proponent: City of St. John's)

The EIS provided information on some predicted impacts resulting from the construction and operation of a 6.8 km long trunk sewer from Logy Bay Road to Portugal Cove Road. The sewer will service an area of 368 hectares between Pippy Park and the St. John's Airport, and from East Meadows West to Windsor Lake. The potential environmental impacts identified in the EIS include: local, minor impacts to water quality due to siltation events; site-specific, minor impacts to the recreational and aesthetic qualities of Virginia River due to clearing of adjacent areas; site-specific, minor impacts to fish-spawning/rearing habitat due to siltation and alteration of the stream bed at river crossings.

The proponent committed to implement mitigatory measures to minimize negative impacts; to monitor water quality of the Virginia River system, ground water levels, and gravel substrate; and to rehabilitate the surface to pre-project conditions. The project was released subject to these activities being carried out to the satisfaction of the Minister.

2. Prosser's Rock Harbour Development Environmental Preview Report.
(Proponent: Fisheries and Oceans Canada)

The EPR provided information on effects that may result from the construction and operation of a breakwater and small boat basin in the Narrows of St. John's Harbour. The boat basin will serve the St. John's fishing community. Impacts during construction were predicted to include: minor, negative impact on the water quality in the boat basin; minor, negative impact on area land traffic; minor negative impact on area fish and marine biota; minor, negative impact on the Anchor Point Historic Site; and moderate, negative impact on quality of life in the area. Impacts during operation of the facility were predicted to include; minor alterations to the hydraulic regime of the Narrows; minor, negative impact on water quality within the boat basin; minimal impact on migratory fish; moderate, positive impact on area land traffic; major, positive impact on the Anchor Point Historic Site; moderate, positive impact on quality of life; moderate, positive impact on tourism potential. The effect on navigation in the case of an accidental event (breakwater failure/collapse) was predicted to be moderate, temporary, and negative.

The proponent committed to implement mitigation and monitoring programs to minimize negative impacts and to ensure that appropriate measures are in place. The environmental impact of the project was predicted to be insignificant when mitigation was considered. The project was released from further environmental assessment and was allowed to proceed subject to commitments made in the EPR.

Ongoing environmental assessments include:

- Long Harbour Phosphorous Plant Decommissioning Environmental Impact Statement
- Forestry Timber Management (Chouse Brook and Roddickton) Environmental Impact Statement (Inactive)
- Cape Ray (Isle aux Morts) Gold Mine Environmental Impact Statement
- Tally Pond - Duck Pond Mining Project Environmental Impact Statement
- Little Grand Lake Logging Environmental Impact Statement
- Island Pond Hydroelectric Development Environmental Impact Statement
- Granite Canal Hydroelectric Development Environmental Impact Statement
- Sheffield Lake Militia Training Area Environmental Impact Statement
- Conception Bay North By-pass Highway Environmental Preview Report

- St. Lawrence Shoal Cove Pond Fluorspar Tailings Disposal Environmental Preview Report (Inactive)
- Holyrood IV Thermal Generating Station Environmental Preview Report
- Freshwater River Finfish Farm Environmental Preview Report
- Penny's Hill Waste Disposal
- Round Pond Hydroelectric Development (Inactive)
- Seal Cove Red Deer Farm (Inactive)
- Greenwood Hydroelectric Development
- Lower Churchill Hydroelectric Development
- Cow Head Offshore Complex
- St. John's Special Waste Transfer Station
- Mud Lake/Paradise River Snowmobile Trial
- Baie Verte Asbestos Waste Project
- Sawyer Lake - Dyke Lake Mining Exploration Road Environmental Preview Report (Inactive)
- Brake's Cove Asphalt Plant Environmental Preview Report (Inactive)
- Nugget Pond Mineral Exploration Environmental Preview Report (Inactive)

B) ENVIRONMENTAL SURVEILLANCE

The Environmental Impact Management Section is responsible for coordinating, monitoring, surveillance and rehabilitation activities at construction sites and resource developments that are being examined through or have been released from the environmental assessment process.

During the 1990/91 fiscal year surveillance activities were conducted at the following developments:

- Governor's Park Recreational Complex
- Long Harbour Phosphorous Plant Decommissioning
- Prosser's Rock Harbour Development
- Leila Wynne Lake Dolomite Quarry
- Trans Labrador Highway
- Whiteway Properties Cottage Development
- Upper Humber - Main River Forest Harvesting Operation
- Little Grand Lake Forest Harvesting Operation
- Berry Hill to Daniel's Harbour Transmission Line
- Hope Brook Gold Mine
- Tally Pond - Duck Pond Mining Project
- Cape Ray Mineral Exploration and Mining Project

- Cat Arm Reservoir Clean-up and Reservoir Enhancement
- Cow Head Fabrication Complex
- Hibernia Development Project
- Short Range Radar Site
- Various mineral exploration projects throughout the province

C) PESTICIDE OPERATIONS LICENSING

The Pesticides Control Section is responsible for licensing pesticide applicators, vendors and operators. In 1990-91, 42 pesticide operators licenses, 200 pesticide applicator licences, and 16 pesticide vendor licenses were issued. In addition, the section handles a large number of miscellaneous pesticide related issues at any one time.

• *Pesticide Operations Compliance and Enforcement*

The Pesticides Control Section conducted approximately 50 routine and non-routine inspections of facilities handling or storing pesticides, pesticide application operations, and other pesticide related activities.

• *Research Projects*

Pesticide residues in wild berries were examined by the Pesticides Control Section. Funding was approved for three additional research projects for the summer of 1990, one of which is an examination of phenoxy herbicide dynamics on a transmission line right-of-way.

• *Pesticides Advisory Board*

In previous years, the Board reviewed all operator licences and agreed to stipulations to be applied to each operation. Due to budgetary limitations, the Board is now inactive. The Pesticide Control Section, effective in 1989, processed all operator licences by means of a referral mechanism involving other provincial and federal departments.

• *National Initiatives*

The Pesticides Control Section actively participated in a number of programs aimed at improving pesticide regulation on a national level:

- Canadian Association of Pesticide Control Officials (CAPCO). This organization met several times to discuss pesticide applicator training, pesticide research, regulatory affairs, and occupational health and safety issues.

- Federal Pesticide Registration Review. As with CAPCO, this organization met several times with negotiations aimed at improving the federal registration of pesticide products for use in Canada.

- *Regional Initiatives*

The Pesticides Control Section is working with the Department of Forestry and Agriculture and the Department of Education to initiate a series of pesticide safety courses for farmers.

The section's enforcement wing is developing a ticketing system to handle infractions under the Pesticide Control Act and Regulations.

- *Hazardous Waste Program*

The section is heading an initiative aimed at both educating the public on household hazardous waste and providing a mechanism by which citizens can bring in household hazardous waste for professional disposal. The program will make good use of local media and waste management expertise in this important program.

- *Environmental Evaluations*

The Surveillance Section has begun the formulation of Environmental Guidelines for Good Construction Practices (Ongoing).

An investigation was conducted into the use/abuse of all terrain vehicles in the Province. This investigation documented the nature and extent of the environmental damage caused by ATV use and the Department of Works, Services and Transportation will be involved in the formulation of new legislation to better regulate ATV use.

SPECIAL ASSIGNMENTS

A) MINERAL EXPLORATION INVENTORY

The Environmental Impact Management Section completed a follow up inspection of mineral exploration activities located throughout the Island. The section will continue to work to ensure that these activities are conducted in an environmentally responsible manner.

B) PESTICIDE OPERATIONS TRAINING PROGRAM

The Pesticides Control Section has been developing a training program for all individuals involved in the sale of commercial or restricted pesticides. In cooperation with the Department of Forestry and Agriculture, the section is preparing to present the courses in conjunction with voluntary farmer pesticides safety courses.

FUTURE GOALS/OBJECTIVES/TRENDS

A) ENVIRONMENTAL ASSESSMENT SECTION

The Environmental Assessment Act was introduced ten years ago. New issues have arisen and new assessment techniques have been developed to try to address them; a review of the environmental assessment process in terms of its applicability to different project types, its usefulness as a planning and decision-making tool, its effectiveness as a forum for members of the public to voice their concerns, and its degree of success in helping to minimize environmental impact is a long-term goal of the section.

B) PESTICIDES CONTROL SECTION

A pesticide applications specialist was hired to develop and implement additional pesticide user training initiatives. The specialist will also facilitate the development of monitoring programs.

CROWN LANDS DIVISION

Mr. John Power - Director

INTRODUCTION

The mandate of the Crown Lands Division of the Department of Environment and Lands is to facilitate the orderly development and conservation of provincial lands for the continuous social and economic benefit of Newfoundland. The division is entrusted to: make land available for industry, settlement, recreational and conservation needs; prevent unauthorized use; secure and guarantee Crown land title; plan the wisest use of land; and provide geographic information services. To accomplish this mandate, The Lands Division operates under The Crown Lands Act. This legislation provides the basis for the issuance of Crown titles, land management and enforcement.

The division consists of a staff of 67 divided into 5 components. One of these components, Regional Services, consists of 4 Regional Offices located in St. John's, Gander, Corner Brook, and Happy Valley - Goose Bay. The regional offices are tasked with processing applications for Crown Lands, public information services, field inspections, enforcement of the Crown Lands Act and the implementation of Lands Branch policies. A total staff of 41 work with regional services.

The three other components of the division are located in the Howley Building in St. John's. The Registry and Records Office with a staff of 9 is the repository for the province of all Crown titles and records pertaining to Crown land. In addition, the administrative and accounting components are attached to this Section. The Lands Titles office with a staff of 11 is mandated to prepare all Crown titles and to update and maintain the provincial cadastral (land ownership) mapping data base. The Cadastral Mapping Section with a staff of 4 is mandated to produce the cadastral map base as they are placed in the map collection. The Air Photo and Map Library with a staff of 2 is the repository of the Provincial Base Map and Air Photo Collections.

As a reflection of the mandate statement, the programs of the division are oriented towards providing service to the general public, industry and the three levels of Government.

PROGRAMS AND ACTIVITIES

A) ALLOCATION OF CROWN LAND

The major function of the Crown Lands Division is the allocation of Crown Lands for any use providing it is environmentally safe and compatible with adjoining land uses. The regional offices, Land Titles Office and Registry Office devote the majority of their time to the processing of applications.

B) CROWN RECORDS

There is an ongoing program in place to upgrade the storage and retrieval systems for Crown Lands Records. In the past year, new map and file storage units have been added for the improvement of the physical storage as well as the completion of the transfer of historical data onto the computerised index.

C) CADASTRAL MAPPING

To add to the cadastral base map collection, the Cadastral Mapping Section is compiling land ownership maps to strengthen the data available concerning land that has been allocated by the Crown.

D) AIRPHOTO AND MAP LIBRARY

The Library is the repository for the provincial air photo and map collection and retails maps and air photos to the general public, industry and the three levels of government.

E) LAND LEGISLATION AND POLICY

The new Lands Act has received first reading in the House of Assembly following which the draft was submitted to the Legislative Review Committee for consideration.

F) AUTOMATION

The Crown Lands Application Processing System is a system that by nature requires a considerable amount of paper to support the processing for a given application. Over the past 10 years, the demands for land inquiries from the public have increased to the point where the Lands Branch is finding it increasingly more difficult to provide the same level of service that was intended 15 years ago when the regional offices were first set up. Because of these problems, it has been decided to computerize.

The Application Tracking System (ATS) will allow instant tracking of applications from registration to issuance of title.

The software was installed in the Howley Building offices in February, 1991 and the regional offices are scheduled to be brought on line from April to August, 1991.

G) FEDERAL/PROVINCIAL AGREEMENTS

Aside from the normal federal/provincial land transfers and exchanges, there are two major initiatives that are ongoing. These relate to: (1) public harbours and (2) reversion of abandoned railway lands.

1. *Public Harbours*

Under the terms of union with Canada, ownership of all public harbours was transferred to the federal government. Public harbours were not defined in the terms of union and, consequently, there is a great deal of uncertainty over ownership.

Negotiations are under way to determine which Newfoundland harbours will be deemed to be public harbours under federal control.

2. *Reversion of Railway Lands*

With the shut down of the Newfoundland Railway in September, 1988, the Crown Lands Division has been given the mandate to oversee the integration of the railway lands into the provincial land base. This process is ongoing and is expected to be completed by April 1993.

H) STAFF DEVELOPMENT AND TRAINING

The major focus of staff development and training has been on in-house training. During the year, 2 specific training seminars were held:

- *Lands Officer's Seminar* - 2 day seminar held in Gander in October, 1990.
- *Survey Inspector* - 1 day meeting held in St. John's in February, 1991.

The courses available through the Public Service Commission have been used extensively by many individuals for personalized upgrading.

FUTURE GOALS/OBJECTIVES/TRENDS

A conscious effort is being made to be more customer-service oriented. Also, the division is striving to remove barriers to all reasonable ideas that will lead to sustainable economic activities.

LAND MANAGEMENT DIVISION

Mr. Robert Warren - Director

INTRODUCTION

The Land Management Division was reorganized in 1989 in order to revitalize existing planning procedures and introduce new land management initiatives with the following objectives:

1. Reduce the length of time to respond to demands for land.

2. Create new employment opportunities in the private sector as a result of making land available to private developers.

3. Recover and reallocate lands currently idle, abandoned or unimproved.

4. Eliminate duplication between departments and streamline existing procedures.

5. Avoid and resolve conflicts between competing areas and uses of Crown Land.

6. Provide plans, policies and programs that will result in better and wiser uses of the province's Crown land resource.

In accomplishing its mandate, the Land Management Division operates under The Crown Lands Act.

The division consists of a staff of 6 employees and the reorganization has resulted in the development of two functional units: Resource Planning and Policy Integration and Land Planning and Allocation, each with its own discreet areas of responsibility.

PROGRAMS AND ACTIVITIES

A) RESOURCE EVALUATION AND POLICY INTEGRATION UNIT

This unit is responsible for ensuring all government land use and resource management proposals are properly integrated, conflicting and competing uses reconciled, and procedures streamlined to prevent duplication.

B) LAND PLANNING AND ALLOCATION UNIT

This unit is devoted to preparing proactive plans aimed at making the best and wisest use of Crown land. The unit is also responsible for undertaking land development schemes to offset the demand for cottage and residential lots.

C) LAND DEVELOPMENT

A variety of development projects were initiated in order to meet growing demands for residential and cottage lots. Three residential subdivisions were planned: Green Island Cove (15 lots), Musgravetown (15 lots) and Markland (4 lots). Roads and lot surveys will be completed in 1990. Two cottage subdivisions were planned and development undertaken: Indian Arm Pond (27 lots) and Thorburn Lake (31 lots). Lots within these subdivisions were awarded by public draw in 1990.

D) LAND PLANNING

Planning projects are best summarized as follows:

- *Butts Pond/Middle Brook Integrated Land Use Plan*

  This plan serves to integrate the natural resource potential of the plan area in such a way that demands for agriculture, construction aggregates, and recreational cottages can be satisfied without conflict.

- *Northwest Institutional Campground Reserve*

  This plan designates Northwest Pond as an exclusive area for campground development for such groups as the Boy Scouts and Girl Guides.

- *Labrador Tote Road*

  Reconnaissance work was completed as a preliminary to the preparation of an integrated resource plan for the final link in the Trans Labrador Highway, known as the Ross Bay-Churchill Falls Tote Road. This plan is being completed for the Department of Works Services and Transportation as part of their obligation under the environmental assessment process. The final plan will be completed in 1990.

E) INTER-DEPARTMENTAL LAND USE COMMITTEE (ILUC)

This committee completed its sixth year with the continued high degree of interdepartmental cooperation. A total of 182 government projects were reviewed involving such things as silviculture, water supply protection, and cottage development projects. The following table provides information on the projects reviewed during the year.

ILUC PROJECT STATISTICS

TYPE OF PROJECT	NUMBER
Municipal Plan Review	2
Agriculture Road	3
Cottage Development	26
Management Plan	4
Municipal Plan	3
Residential Development	0
Reserves	2
Waste Disposal Site	2
Forest Road	43
Zoning Plan	6
Development Plan	2
Protected Water Supply	10
Silviculture	67
Other	12
TOTAL	182

F) POLICY

Following is a summary of major policies developed during the year:

1. *Aquaculture*

In consultation with the Department of Fisheries, a land disposition policy was developed to deal with the new growth in aquaculture in the province. This policy has as its cornerstone a "one-stop shopping" procedure which eliminates confusion on the part of the applicant and serves to prevent uncoordinated and potentially conflicting recommendations from a multitude of agencies involved with aquaculture development. The major features of the disposition aspect of the policy are as follows:

Tenure:

(a) 15 year lease for commercial use
(b) 1 to 5 year licence to occupy for research and/or experimental use

Rental:

(a) $12/ha for commercial use
(b) $4/ha for non-commercial use

Special Development Conditions:

(a) title cannot be assigned or sublet without prior approval of the Lands Branch
(b) title-holder must possess an aquaculture licence in good standing at all times
(c) title may be cancelled if inoperative for a period in excess of 3 years

2. *Commercial Outfitting*

The Lands Branch completed a major policy governing outfitting in the province. This policy followed a lengthy public consultation. This policy provides a greater balance between the needs of the outfitter to secure and protect his investment and the rights and privileges of the general public to share the province's fish and game resources. Major features of the policy are as follows:

(a) Long term (50 year) leases are available to outfitters.
(b) Outfitters must meet rigorous high standards or lose title to the land.
(c) Private cottages on Crown land will not be permitted in areas that may conflict with the viability of licensed outfitting operations.
(d) Sensitive fish and game habitat will be off limits to lodge and private cottage development.

FUTURE GOALS/OBJECTIVES/TRENDS

A more integrated approach to the management of our resources is necessary if we are to achieve sustainable development. More comprehensive strategic planning is required. The task of setting the direction for integrated resource planning has fallen on the Executive Committee for Sustainable Development which is chaired by the Deputy Minister of Environment and Lands. It is expected that the committee will report to Cabinet on this matter in the near future.

SURVEYS AND MAPPING DIVISION

Mr. Neil MacNaughton - Director

INTRODUCTION

The Surveys and Mapping Division administers programs in geodetic surveys, topographic base mapping and aerial photography. The division provides development in land tenure information systems and assists other departments and agencies in the design and implementation of surveys and mapping projects. The legislative authority for the division is contained in Section 6 of The Department of Environment and Lands Act, 1989.

The division has a permanent staff complement of 12 employees in the Geodetic and Legal Surveys, Topographic Mapping and Aerial Photography Sections, which together with the Support Section, assist in fulfilling the mandate of the division. The division "contracts out" much of its work and assists other departments and agencies in contracting related works to provincial standards.

PROGRAMS AND ACTIVITIES

A) GEODETIC SURVEYS

The division establishes and maintains a network of permanent survey markers primarily in developed areas as reference points for property surveys and topographic mapping. In 1990/91, 195 new stations were established in Notre Dame Bay area.

Since 1963, there have been 5,935 survey markers installed in the Newfoundland Geodetic Network and it is estimated that 800 additional markers are required to provide adequate coverage.

It is estimated that the survey marker loss rate is 3.5 percent per year, and therefore, approximately 200 replacement markers are required per year to maintain the current number.

In 1990/91, 26 photo control points were surveyed in support of the Topographic Mapping Program.

The Geodetic and Photo Control work was done by 4 contracts at a total cost of $106,700.

B) COMMUNITY MAPPING

Large scale base maps at 1:2,500 and 1:5,000 scales are produced for communities and developed areas. The maps are compiled from aerial photographs and contours are plotted on most of the community maps. The aero-triangulation process which relates the air photos to the geodetic system is done "in-house." The aerial photography and compilation are contracted to Newfoundland companies.

Since 1968, 3,615 map sheets have been produced and approximately 885 additional map sheets are needed to complete initial map coverage of all communities.

In 1990/91, 71 map sheets at 1:2,500 scale and 44 map sheets at 1:5,000 scale were produced.

There was one photography contract (valued at $8,300) and three map compilation contracts ($94,400).

C) RESOURCE MAPPING

The Surveys and Mapping Division conducted two work shared projects with the Canada Centre on Geomatics, a division of the Department of Energy, Mines and Resources Canada, to produce digital data sets for NTS map sheets. Work was initiated on twenty(20) 1:50,000 scale map sheets and eight(8) 1:250,000 map sheets. The work was completed on fifteen(15) sheets and work for the remaining sheets was carried to the 1991/92 fiscal year.

D) NEWFOUNDLAND GEOGRAPHICAL NAMES BOARD

In the Fall of 1990, the responsibility of the Board was re-assigned from the Crown Lands Division to the Surveys and Mapping Division. After two years without a Names Board, a new Board was appointed effective January 1, 1991, for a three year duration. The new Board has held three meetings and has begun to deal with a backlog of name approvals.

E) AIR PHOTOGRAPHY SERVICES

The air photo laboratory provides a complete service in development, contact printing and enlarging of aerial photography and contact printing of large format map sheets. The air photo laboratory provides assistance to all departments of government and the general public. The total value of service provided in 1990/91 is $161,100.

The division also provides assistance to other government departments in the procurement of aerial photography and the inspection of new photography. In 1990/91, approximately 3,350 hours of new photography was flown for base mapping and forest inventory valued at $68,200.

F) LEGAL SURVEYS

The division provides consultation in the preparation of specifications and inspection of legal survey contracts. In 1990/91, the division assisted the Pippy Park Commission in the surveying of 13 km of boundary; the Land Management Division in the surveying of 32 cottage lots; the Agriculture Branch in the survey of three parcels. This work involved 6 contracts with a total value of $63,100.

G) REDEFINITION

The division is continuing work to prepare the Newfoundland geodetic survey data for readjustment on the 1983 redefined North American Datum. The federal government announced official adoption of the NAD83 datum in 1990 and the Newfoundland readjustment should be completed and ready for implementation in 1992.

SPECIAL ASSIGNMENTS

A) BOOK OF MAPS FOR NEWFOUNDLAND

A book of maps at 1:250,000 scale for the Island of Newfoundland was printed in 1991/92. The book is a reprint of the federal 1:250,000 topographic maps in a 50 map sheet 11" x 14" format. The book features a revised transportation network with forest access roads, a 5 minute latitude-longitude graticule and a 1,000 place name gazetteer.

B) PROVINCIAL WALL MAPS

Work was started in early 1991 to compile three new wall maps: Labrador at 1:1,000,000; Newfoundland at 1:500,000 and Newfoundland and Labrador at 1:1,500,000. These maps will be compiled in digital format. The maps will be completed and printed in 1991/92.

FUTURE GOALS/OBJECTIVES/TRENDS

A) Geographical Information Technology Transfer Program

Federal/Provincial work shared projects are currently producing digital data sets for the National Topographic Series of maps. Coverage of the Island of Newfoundland and parts of Labrador is planned for these projects. In 1991/92, the current funding level of $80,000 should be maintained to produce digital files for an additional 30 map sheets.

B) Large Scale Digital Mapping

In 1991/92, the division will develop standards for the compilation of large scale maps (1:2,500 and 1:5,000 scales) in digital format. The division will likely model these standards from the federal government and Province of Ontario standards.

C) Property Mapping Program

The division will continue to develop standards and procedures to initiate a province-wide property index mapping program. The proposed database will be built on a GIS with the property overlay in vector format and the base maps in raster format. Utilization of cheap raster images of the base maps will make province-wide input of data from the deeds registry feasible at the beginning of the program.

D) Cost Shared Program in Surveying and Mapping

The Newfoundland Surveys and Mapping program received federal funding assistance from 1968 to 1977 but has been 100 percent provincially funded since 1978. The division requires additional funding: to provide standard digital base map data for resource managers; to initiate a province-wide system of property mapping; to continue maintenance of the Geodetic reference system; to convert the large scale base mapping program to digital format and to provide technical leadership that will ensure standardization in GIS data.

A new proposal for a five year Canada/Newfoundland cost shared agreement in Surveying and Mapping was drafted in 1989. Efforts are continuing to promote this proposal as the basis for a new five year cost shared agreement.

PARKS DIVISION

Mr. Don Hustins - Director

INTRODUCTION

Parks Division of the Department of Environment and Lands is responsible for the administration, management, planning and establishment of Newfoundland and Labrador's Provincial Parks, Wilderness Reserves and Ecological Reserves. The division also interacts with the Canadian Parks Service in planning new National Parks and Marine National Parks in the province. Parks Division is also a member of the Canadian Heritage Rivers Board and System.

Parks Division has a goal statement which identifies the basic intent and aim of the parks system. Four basic objectives related to tourism, outdoor recreation, preservation, and heritage appreciation, define program direction. Consistent with these objectives, natural resources are protected for interpretive, educational and scientific uses. Outdoor recreational resources are managed to provide quality opportunities to residents and visitors.

Parks Division is responsible for two pieces of legislation: The Provincial Parks Act, 1970; and the Wilderness and Ecological Reserves Act, 1980.

The division consists of four major sections. These are Administrative Support, Operations, Interpretation, and Planning and Development.

The Administrative Support Section has a permanent staff complement of 19 employees which operate out of the headquarters office in St. John's and the 4 regional offices located in Whitbourne, Notre Dame Park, Pasadena, and Stephenville. The division also has a number of long term temporary support staff located at headquarters and the regional offices.

The Operations Section has a seasonal staff of approximately 300 (including students) who are employed during the peak season each year from April to September. These employees provide the assistance necessary to carry out the day-to-day operations necessary for an efficient parks system.

The Interpretation Section has a permanent staff complement of 2 employees located at the headquarters office. As well, a number of temporary staff, seasonal staff and students are employed during the peak season and work out of headquarters, various parks and ecological reserves.

The Planning and Development Section has a permanent staff complement of 5 employees assisted by long and short term temporary staff.

PROGRAMS AND ACTIVITIES

A) PARK CLASSIFICATIONS

The division has six classes of parks under its jurisdiction which encompass 4492 sq. kilometers. They are as follows:

Park Classification	Number	Area (Sq. Km.)
Wilderness & Ecological Reserves		
- Designated	10	4022
- Provisional	5	45
Natural Environment Parks	34	234
Outdoor Recreation Parks	20	7
Natural Scenic Attraction Parks	20	5
Waterway Parks	-	-
- Canadian Heritage Rivers	1	103
Park Reserves	5	76
Total	**95**	**4,492**

A total of 1.8% of the total area of the province is protected via the provincial and national parks systems.

Grand Codroy is the only provincial park which offers 3-way hook-ups per campsite. Blow Me Down, Pistolet Bay and Grand Codroy parks also have comfort stations with flush toilets and showers. Facility development in other parks is limited to pit toilets and potable drinking water.

Total permanent staff complement is 27 and slightly under 300 seasonal staff (parks officers, rangers, students, labourers and carpenters) are annually hired to operate and maintain the system of provincial parks.

B) ADMINISTRATIVE SUPPORT

The primary objectives of the Administrative Support Section are to provide the administrative support and policy direction required to operate all parks and to ensure all parklands are administered with regards to good public health and safety standards. This section is also responsible for formulating policy and legislation required for the system of parks and to ensure the natural and physical resources contained in all parks are protected. It also provides the administrative and clerical support for the division at headquarters.

A report entitled "A Comprehensive Plan and Revitalization of the Provincial Parks" was prepared during the year. The purpose of the plan was to identify the recapitalization problems facing the parks system and to integrate the parks system into the overall tourist industry of the Province. Subsequent discussions were held with tourism officials to ensure parks projects were considered in their agenda.

Newfoundland hosted the 29th Annual Conference of the Federal/Provincial Parks Council. The conference was held in St. John's, during July, 1990.

The director of provincial parks was elected Vice-chairperson of the Canadian Heritage Rivers Board for the year and agreed to host the 1990 Board meeting in Newfoundland.

In 1986, the division initiated a full assessment of the nature and dimensions of parks maintenance and recapitalization problems for the entire parks system. The review was undertaken over a three-year period and was completed in August. The final report established several major objectives with regards to maintenance and recapitalization. These included the production of five year maintenance and recapitalization plans; the development and implementation of new standards; the determination of priorities to improve the quality and effectiveness of current and future programs; and the forecasting of major future requirements.

The division planned, organized, hosted and chaired three major national meetings during the year. They included the Federal/Provincial Parks Directors Meeting and Annual Conference; The Canadian Heritage Rivers Board meeting; and the Federal/Provincial Park Ministers meeting. At each conference, many important park matters of national and provincial interest were discussed.

Park Ministers agreed to undertake a second annual nation-wide Parks Day in 1991. They also agreed to endorse a set of principles related to parks and sustainable development and they made a commitment to establish a set of guidelines for parks system planning in respective jurisdictions.

Three former parks division employees were recipients of the Federal/Provincial Parks Meritorius Award at the conference. Recipients were Austin Patey, park officer, River of Ponds; Jim Newhook, eastern regional inspector; and George Draskoy, interpretation supervisor.

The divisional George F. Chafe Provincial Parks Award was presented to Norm Lane, park planner. Mr. Lane was the recipient of the award because of his extensive involvement in surveying and developing most of the provincial parks in the province.

During the fiscal year, parks officials began discussions with the provincial Department of Development and the federal government for a proposed tourism agreement. A variety of park projects relating to improved visitor services and enhanced education were considered.

The Private Sector Initiatives Program which began in 1988 was under extensive review and new applications were not accepted. Federal/Provincial negotiations were also underway during the year for the Gros Morne National Park. Officials were directed to negotiate an amendment to the agreement with the view of substituting the plateau access system for other activities.

Early in the year, government directed the department to make land available in Frenchman's Cove Park for the development of a golf course. The process of leasing the land to the Grande Meadows Golf Association, began, as the first golf course in a provincial park moved one step forward towards becoming a reality.

Late in the fiscal year Canadian parks officials briefed the province on their plans regarding marine national parks, the Green Plan and new national parks in Labrador (i.e. Torngat and Mealy Mountains). Following discussions it was agreed that additional follow-up on the plans would be presented in more detail the next fiscal year.

The divisional policy and procedures manual underwent extensive review during the year. It is expected that the new manual will be complete early in the next fiscal year.

C) OPERATIONS

The prime objectives of this section are to operate and maintain the system of provincial parks, wilderness reserves and ecological reserves; to maintain each park to an acceptable health and safety standard for the public; and to provide opportunities for quality outdoor recreation in a natural environment.

Permanent staff totalled 15 including the operations supervisor, a maintenance supervisor, 4 regional park supervisors, 5 regional park inspectors, 3 regional carpenters and a sign production worker. In addition, 4 clerks and 3 park officers were employed on a long-term temporary basis and a seasonal staff of 282 including 37 park officers, 106 park rangers, 35 labourers, 103 students and a maintenance repairman were hired to operate and maintain the system of parks and reserves.

Special projects undertaken during the year included a staff time review and the completion of historical data on park operating costs. Both projects are expected to be completed next year.

With the exception of Blue Ponds and Pinware River parks, which opened late because of snow conditions, all remaining parks opened for public use for the same period as in the previous year.

Organizational changes in tabulating visitor use statistical data were made during the year with this responsibility being transferred from the Planning to Operation Section. In addition, Operations assumed new duties associated with the ongoing management of the designated Wilderness and Ecological Reserves.

Visitor use of provincial parks was 1,755,000 in 1990 and 343,000 camper nights were recorded during the summer season.

D) INFORMATION/EDUCATION

The prime objectives of this section are to instill an awareness and appreciation for the natural and cultural heritage of provincial parks, wilderness and ecological reserves; to educate visitors on the resources of the parks system; to provide the public with visitor information about the parks system; and to encourage visitor participation in programs which will increase their recreational experience and opportunities.

Permanent staff consist of the interpretation supervisor and an exhibit designer. In addition, 12 temporary, seasonal staff and students were hired to implement programs. Seasonal interpreters were employed at Barachois, Butter Pot, Beothuck, Notre Dame, Squires Memorial, headquarters and Cape St. Mary's Seabird Ecolcgical Reserve.

Porcelain enamel exhibits depicting the park name, classification and a brief description of the park which were fabricated the previous year were erected in parks prior to opening day 1990.

The new Atlantic Salmon exhibit which was funded by the Federal/Provincial Inshore Fisheries Development Agreement and the Salmon Association of Eastern Newfoundland was erected in twelve parks. Photographs including salmon leaping at Big falls in Sir Richard Squires Memorial Park were provided by the National Geographic.

A new plexiglass display case was designed and fabricated during the year to display a variety of park brochures. In total, 68 cases were produced and 40 distributed to parks and 28 to tourist chalets in the province. Total cost of construction of the display cases was $5,100.

The annual provincial parks brochure was revised, updated, rewritten and printed for a period of two years. In total, 60,000 brochures were printed at a cost of $9,000. These brochures were available in all staffed parks and tourist chalets.

Preliminary work began on drafting new brochures for Sandbanks and Blow Me Down provincial parks. The initial concept of a provincial parks activity book which is designed to increase young park visitors awareness and understanding of parks, was produced.

Park Interpretation Week was held July 26 - 30 with the focus on native and introduced species of the province. The symbol selected to emphasize the introduced species was the moose. A drawing submitted by Kim Rowsell, a grade 9 student of Shaw Collegiate, Summerford, was chosen for the cover of the Interpretation Week Brochure and also used on badges and decals to promote the program. A total of 5,000 brochures were printed at a cost of $2,700 and distributed to park visitors.

The first Parks Day organized by the Federal/Provincial Parks Council was conducted on June 9, 1990, coinciding with Environment Week. Major events associated with Parks Day included the promotion of a new Provincial Park Logo depicting the Pitcher Plant and the new information exhibits were unveiled at each park.

In a effort to expand on the interpretative themes used in parks to educate visitors, eleven themes were drafted for use. Each theme contains a list of objectives which complement the park objectives and a list of activities for the naturalists to undertake.

Other park publications continued to be in popular demand with over 30,000 distributed to park visitors. Two new park brochures were produced for Square Pond and Backside Pond parks. In total, 5,000 brochures were produced for each park at a total cost of $1,100.

E) PLANNING AND DEVELOPMENT

The prime objectives of this section are to provide the overall short and long-range planning for parks and reserves; initiate and administer land acquisition proceedings, legal surveys and proclamations of parklands; prepare site development plans and design and layout all new facility development; prepare construction guidelines and facility development standards; administer construction projects in the field; and to interact and liaise with the Wilderness and Ecological Reserves Advisory Council in establishing new reserves.

Permanent staff of this section consists of the planning and development officer, 3 planners, 1 parks technician and a cartographic technician. In addition, a temporary planner, wildlife biologist and two summer students were hired.

Capital monies were provided in 1990-91 for four major projects. At Blow Me Down provincial park $50,650 was expended for completion of access requirements (road, parking area) associated with the comfort station constructed the year before. The new facility opened for public use in July, 1990.

Several development activities occurred at Pistolet Bay provincial park. A septic system was installed to service the comfort station built in 1989, a trailer dumping station was constructed, campsites and roads were upgraded, a new entrance kiosk was built, and the park entrance was landscaped for a total cost of $145,900. The new comfort/dumping station opened in August, 1990.

Campground construction was completed at Sandbanks provincial park. Twenty-five new campsites are now available for public use. In addition, an administrative building was built, road and parking lot improvements were made and eight new picnic sites were added. In total, $180,000 was expended at this park.

Park establishment continued for the new Grand Lake provincial park in Labrador. A boundary revision was surveyed ($6,500) and nine cabins were acquired from private ownership at a cost of $49,000.

Pipers Hole River provincial park was proclaimed on July 20, 1990 near Swift Current on the Burin Peninsula. It encompasses an area of 497 hectares.

A Provincial Park User Survey was undertaken during the summer as a co-operative effort of the Protected Areas Association of Newfoundland and Labrador, Parks Division, and IN-EN Design of St. John's. The survey was designed to provide information from provincial park users by asking them to offer opinions and ideas about the provincial parks program and related environmental issues. The results will help program planners and park administrators in designing and establishing future activities, facilities, and programs for provincial parks.

Three thousand surveys were distributed to 10 larger provincial parks, geographically located throughout the system. Seven hundred and twenty-one surveys were returned, reflecting a 24% response rate. The results of the survey will be available in the next fiscal year.

A milestone occurred in Parks Division involving the Canadian Heritage Rivers Program during the year. The Main River was successfully nominated to the CHR system in January, 1991, making it the first Newfoundland river to be nominated. Following completion of a management plan, the river will be designated and protected to preserve the outstanding natural and recreational features of this waterway.

Parks Division continued its involvement with the Protected Areas Association. Staff participated on several committees of the Association. A grant of $22,000 was given to the Association for research and production of a Natural Regions Study. A report entitled "Natural Regions of Newfoundland and Labrador" was subsequently produced for public review.

Several significant accomplishments occurred within the Wilderness and Ecological Reserves Program. There was one full status ecological reserve established, Watt's Point Ecological Reserve in December, 1990. The 30.9 sq/km. reserve will protect and preserve rare and unique plants and associated calcareous habitats near the coastal tip of the Great Northern Peninsula.

Several new provisional ecological reserves were also established. They include:

- West Brook provisional reserve - established in May, 1990, to provide protection to one of the few remaining native red pine stands in the province.

- Hawke Hill provisional reserve - established in June, 1990 with the aim of preserving arctic-alpine flora which is rare on the Avalon Peninsula.

- Baccalieu Island - given provisional reserve status in January 1991. Its purpose is to protect a large and diverse seabird colony which is considered of global significance. The island is home to the largest breeding population of Leach's Storm Petrels in the world.

Public Hearings will be held on all provisional reserves during the next fiscal year.

The Seabird Sanctuary Ecological Reserve Committee continued to meet during the year with significant progress made towards finalizing preliminary management plans for Cape St. Mary's and Witless Bay Islands. The Committee visited Hare Bay Sanctuary and produced a discussion paper on this sanctuary.

FUTURE GOALS/OBJECTIVES/TRENDS

A major goal of the division is to develop a comprehensive park plan. This plan would include a review of all divisional programs/activities and functions as well as address the problems and opportunities facing the system of provincial parks, wilderness reserves and ecological reserves.

A second major goal of the division is to define and map the province's natural regions and to use this material to assist in the completion of a parks system plan. The division will be working with the Wilderness and Ecological Reserves Advisory Council and the Protected Areas Association to implement this program.

A third major goal of the division is to ensure that all parks continue to offer safe and healthy opportunities for outdoor recreation to all visitors. In this regard, emphasis will be placed on completing a maintenance management manual and updating the recapitalization needs of all parks.

WILDLIFE DIVISION

Mr. Jim Hancock - Director (Acting)

INTRODUCTION

The mandate of the Wildlife Division is to maintain the ecosystems upon which wildlife and people depend and to do so recognizing the values of the diversity and abundance of wildlife species and populations; to provide for the humane and sustainable use (both consumptive and nonconsumptive) of wildlife; and to help establish and maintain a social environment that is conducive to effective wildlife conservation. The primary legislation governing the activities of the division is The Wild Life Act and its associated regulations. The division is organized around four sections:

- *Administration* which is responsible for overall direction, policy establishment and implementation, regulation changes, licence sales, the big game licence draw, and clerical support;

- *Protection* which is responsible for prevention of violations and enforcement of the Regulations of the Wild Life Act;

- *Research and Management* which is responsible for biological investigations and monitoring of wildlife populations as well as the implementation of management practices to sustain viable populations of all species;

- *Information and Education* which is responsible for informing and educating the public about wildlife and its habitat to foster public attitudes and actions which are compatible with our wildlife resources and management and protection practices. This Section includes Salmonier Nature Park.

Because of the need to provide services throughout all the province, the division has a headquarters in St. John's and 4 regional offices as well as a number of smaller district offices. Some of the activities of the division such as public relations and the hunter capability test cross over section affiliations and are carried out by many staff members regardless of the section to which they belong.

PROGRAMS AND ACTIVITIES

A) MAJOR CHANGES BIG GAME

- Island moose licence quota is 29,227, up 5369 licences from 1989-90.
- Labrador moose licence quota is 145, up 15 from 1989-90.
- Caribou licence quota is 2,640, up 190 licences from 1989-90.

B) MOOSE STATUS REPORT

- *Newfoundland*

Although moose populations continue to be high in some areas, heavy harvests over the last 3 years are beginning to reduce densities in the accessible portions of some management areas. However densities still exceed the habitat capacity in remote portions of many management areas, along the entire South Coast and in interior mountainous regions. For the 1991 hunt 19 portions of existing management areas were zoned out to try directing greater hunting pressure upon them. This did not prove to be successful in most areas so the recommendations for 1992 are to eliminate most of these zones again.

Research projects in Northwest Gander and Middle Ridge were terminated in 1990 and shifted to two new areas, New Bay Pond (Twin Lakes) and the Avalon Wilderness Area. The focus of the study in New Bay is on the relationship between moose and silviculture spacing of balsam fir. This project involves the cooperation of Abitibi Price and the Department of Forestry and Agriculture. The work on the Avalon focuses on calf-survival rates in the absence of Black bears and potential yearling dispersal.

Aerial surveys were conducted in Area 23 and the New Bay Pond area in February/March, 1991. The population estimate for Area 23 was 9,200 or 2.1 moose per km^2. The population estimate for New Bay Pond was 1260 or 3.1 moose per km^2, up somewhat from the density estimate for this same area in 1990.

- *Labrador*

Moose have now become established in virtually all of the forested eco-regions throughout Labrador. Densities vary but the highest are in the Grand River Valley and Lake Melville drainage system. Recent census estimates indicate numbers are also improving within the drainage systems of southeastern Labrador. Based on available data, hunting seasons are permitted on approximately one-third of the total range, and the balance awaits the performance of the required population censuses. As a result, open hunting seasons are not yet permitted in western Labrador, or north of the Kanairiktok River.

C) CARIBOU STATUS REPORT

- *Newfoundland*

There are two research projects ongoing. The first deals with impacts of the Hope Brook development on the Lapoile caribou herd. This project began in 1986 and has confirmed that caribou avoided the mine site area once construction began. So far, the division has not detected any change in caribou numbers that would reflect a detrimental impact by the mine but a census is planned for this winter and should provide a sound basis for evaluation. This project will end in April, 1992, at which time a final report will be available. Meanwhile, results have been annually reported to Hope Brook Gold Inc. and to the government, as well as to a number of wildlife conferences.

The second project involves Wildlife Habitat Canada and Abitibi-Price Inc. and deals with the impacts of logging on caribou in the Northwest Gander River area. Ongoing since 1987, this project is providing the most detailed information available on this problem. The project clearly indicates that female caribou with calves are quite susceptible to disturbance. Other results indicate that caribou are using regenerating forage on cutovers. However, the importance of this to their overall nutrition is unknown at present. This project will continue until 1994.

In addition to these projects the Wildlife Division continues with its ongoing program of population counts and classifications. The latter refers to assessing the percentages of the herd that each sex and age category (adult, yearling, calf) comprise. Approximately 3 herds are counted each year and classifications will be conducted on approximately 6 herds.

- *Labrador*

The George River Caribou Herd continues to provide the foundation for big-game hunting in Labrador, with an estimated 80 to 100 being harvested annually. The status of the herd is being monitored by the use of 59 VHF (very high frequency) and 17 UHF (ultra-high frequency) radio-collars. The UHF collars depend upon the Argos satellite system. The deteriorating condition of both the respective animals and the herd is thought to be associated, but not exclusively, with the condition of the summer range.

Due to the herd ranging throughout the Labrador/Ungava Peninsula of Nouveau Quebec and Labrador, both Quebec and Newfoundland/Labrador have jurisdictional interests in the management and use of the resource. However, a mutually recognized and respected management plan and procedure for the resource does not exist.

The George River Caribou Herd surveillance is included in the mitigation and monitoring plans that are being implemented by the Department of National Defence. These plans are recommended in the draft Environmental Impact Statement on the impact of low-flying military jet aircraft on caribou movements and behaviour. The Wildlife Division continues to provide cooperation and relevant data.

The Mealy Mountain caribou population is stable at an estimated 2000 animals. The population is not increasing despite the absence of a legal hunting season due to abnormally high calf mortality coupled with high adult mortality by poaching on the southern range, south of the Mealy Mountains.

The Torngat Mountain caribou population occupies range north of the Fraser River Canyon to Cape Chidley. The population is being monitored by 3 to 5 UHF radio-collars; however, total numbers, while thought to be in the thousands, are still uncertain. This population is also shared with the adjoining Province of Quebec.

Caribou populations are also found in the areas of Lac Joseph, Red Wine Mountains and MacPhadyen River. Each population is thought to contain 500 to 700 animals. During the recent years, the George River herd has ranged further south into central and western Labrador and, as a result, it mixes with these more sedentary populations in winter.

D) BEARS STATUS REPORT

- *Newfoundland Black Bear*

The Black bear is hunted in spring and fall during two separate seasons. Growth in this sport has been slow but continuous involving both residents and nonresidents. A small but well established outfitting industry now exists.

The division is presently developing a management plan for Black bears which will be available in draft form in the spring of 1992. This will address all aspects of Black bear management in insular Newfoundland.

Only one project is currently underway. Since 1985 the division has been trying to estimate Black bear densities in central Newfoundland in an effort to establish population estimates for this species throughout the softwood forest regions of the island. Presently the division is operating in the Northwest Gander River area and is being assisted by Abitibi-Price which provides lodgings for field staff. This project is the only Black bear work involving biological investigations now underway. The study is less intensive than preferred and caution must be exercised in the interpretation of its results. The data suggest that Black bear numbers may be highly variable between areas and that overall numbers are healthy.

- *Labrador Black Bear*

The Black bears of northern Labrador are being studied in cooperation with the University of Alberta. The range of Black bears has expanded to include all Labrador eco-regions, including the habitat formerly occupied by the now extinct barren-ground grizzly bear. Total numbers throughout Labrador are increasing.

- *Polar Bear*

Through conservation efforts Polar bears are beginning to become more common along coastal Labrador, and are also becoming more common along the northern and northeastern coast of the Island. The bears are gradually beginning to re-occupy their former range.

By International Agreement, the Province of Newfoundland has agreed to an annual quota-kill of four bears. The hunting season for Polar bears was suspended from 1971 until 1989, when a limited hunt was authorized for the residents of the Torngat Mountain electoral district in cooperation with the Labrador Inuit Association in Northern Labrador. A similar hunt was again authorized in 1991. Nine bears were shot which is double the quota. Another request from the LIA for further hunting in 1992 is expected.

The population is shared between the jurisdictions of North West Territories, Quebec and Newfoundland, and is being studied for management purposes in a cooperative arrangement between the Canadian Wildlife Service, Newfoundland/Labrador Wildlife Division and the Labrador Inuit Association.

E) SMALL GAME STATUS REPORT

Population trends of ptarmigan and grouse are determined primarily by harvest reports of hunters. Only figures for 1989 are available to date. In 1989, 2749 questionnaires were sent out to licence holders in both Newfoundland and Labrador. About 43% of these hunters responded.

From these responses it is estimated that the 1989 ptarmigan harvest on the island was 61,500, up 71% over 1988 while that in Labrador was 245,000, up 220% over 1988.

The 1989 grouse harvest on the island was estimated at 20,774, up 35% over 1988 while that in Labrador was 75,311 up 7% over 1988.

A project to improve ptarmigan habitat using controlled burning was in its third year of a five year term in 1990. The project is cost shared between the division and Wildlife Habitat Canada. Two sites were burned totalling 2,797 hectares in the Fairhaven and Red Head River areas at a cost of $13.21 per hectare.

Two graduate students from the University of Wisconsin are studying aspects of ptarmigan movement and dispersal on the Avalon Peninsula.

F) FURBEARERS STATUS REPORT

- *Coyotes*

The first confirmed report of coyote in the province was in 1987 near Deer Lake. The first report of coyote predation on sheep was made in October, 1991. The incident occurred on the Cormack Community pasture. Staff of the Division investigated and concluded that the predation was most likely done by a coyote.

A four month trapping season from November to February has been in effect since 1989/90. Eleven kills have been reported to date: 8 in Western Nfld; 2 on the Northern Peninsula; and 1 on the Baie Verte Peninsula.

Coyote numbers are expected to grow since evidence from other North American jurisdictions indicates that eradication and control measures are ineffective.

- *Muskrat Habitat Improvement Project*

This was a cooperative project involving the division, Wildlife Habitat Canada, University of Wisconsin and the Newfoundland and Labrador Trappers Association. Field work involving the planting of cattails and bulrushes concluded in 1989. A graduate student with the University of Wisconsin examined the influence of mink predation on muskrat populations in the same area. The data associated with this work is now being analyzed.

- *Newfoundland Lynx*

The population seems to have hit an extremely low level about 3-4 years ago and is now recovering.

The trapping season was closed throughout the island for 3 years and was reopened for a 3 week period in Eastern Newfoundland only in February, 1991. For December, 1991 a three week season has been permitted in the eastern and northwestern parts of the island. Central Newfoundland remains closed.

Fur farmers remain very interested in lynx production. A permit to capture 12 animals was issued by the division in 1990 to the Newfoundland Fur Breeders Association. Under this permit 4 animals were obtained. The permit was reissued in 1991 to cover the balance (8 animals).

G) WOLVES STATUS REPORT - LABRADOR

Wolves are becoming increasingly common throughout Labrador. The reason is thought to be due to the greater number of George River caribou and other caribou using Labrador territory, and the increasing abundance of moose as an alternate prey species.

H) NON-GAME AND ENVIRONMENTAL STATUS REPORT

Efforts continue to gather baseline information on a number of non-game species including: Bald Eagle; forest raptors; small mammals; bats.

The division is directly involved in a number of environmental assessments including:

- Cape Ray Gold Mine (moose, caribou, raptors).
- Chouse Brook Forestry (all species).
- Long Harbour Decommissioning (contaminants).
- Bull Arm (otters, bald eagles).
- Low Level Flying (caribou, raptors, other).
- Little Grand Lake (pine marten).
- Tally Pond Mine (moose, raptors).
- Granite Canal Hydro (caribou, raptors).
- Lower Churchill Hydro (all species).
- Sheffield Lake Military Range (caribou).
- Nugget Pond Mine (moose, raptors).
- Sawyer Lake Mine (caribou).
- Ptarmigan Trail (caribou).
- Garia Bay Hydro (caribou, raptors).

The division is working with a number of other cooperators on the establishment of a "Model Forest" for this province under the auspices of the Green Plan. As well, the division is cooperating with the Canadian Forestry Service to study the impacts of prescribed burning and the use of herbicides on wildlife, and particularly small mammals. This is being suggested as a Green Plan initiative.

Cooperation continues with the Department of National Defence in monitoring caribou, polar bear and peregrine falcon populations at the 4 short range radar sites in Labrador currently under construction.

Along with a number of other agencies, the division is reviewing how to apply environmental assessment to forest harvesting, silviculture and management activities.

I) EASTERN HABITAT JOINT VENTURE

In January, 1990 both the Minister of Environment and Lands and the Premier signed an agreement with the 6 other eastern provinces, Government of Canada, Ducks Unlimited Canada and Wildlife Habitat Canada to implement the North American Waterfowl Management Plan through the Eastern Habitat Joint Venture. This agreement launched a 5 year provincial cost shared program which will provide for the expenditure of more than $1.5 million dollars on waterfowl management activities in this province. Most agreements will be implemented through Ducks Unlimited by contracting work to non-government associations such as rural development associations, environmental groups, boy scout and girl guide troops.

In 1990, activities centred on negotiations for the design and development of Eastern Habitat Joint Venture policy and procedures. Four project proposals were also approved.

In 1991, the division coordinated the activities of the Eastern Habitat Joint Venture in the province through a program manager at Wildlife headquarters and a wetlands stewardship coordinator in Pasadena. Three projects were implemented in 1991. Their progress to December 1, 1991 is summarized as follows:

- *Freshwater Wetlands Project* - This project was located in the Birchy Basin within a defined area of 61,000 acres. Negotiations began with land owners toward a stewardship agreement to manage the area for waterfowl resources. Ducks Unlimited examined options for replacement of the existing dam with a new structure. A draft "Newfoundland and Labrador Wetlands Stewardship Plan" was prepared for future consideration.

- *Habitat Management for Eider Restoration* - This project included the construction and installation of more than 1000 eider nest covers to protect eggs from predation by gulls. Work was carried out by the development associations at Cartwright, Burgeo, Main Brook, and St. Barbe.

- *Estuary Protection* - This project included stewardship planning for the Codroy Estuary and area. Field work was carried out to identify important habitat and land ownership. Several owners were approached to participate in stewardship or purchase agreements.

- *Other* - A field tour was given to representatives of the North American Wetlands Council in September, 1991. The two day tour included representatives of federal and provincial wildlife agencies, Ducks Unlimited and Wildlife Habitat Canada. Mr. Stewart Weldon of Corner Brook Pulp and Paper Limited was presented with the NAWMP gold pin for distinguished contribution to the work of the Plan. It was the first time the pin had been presented in this province since the Eastern Habitat Joint Venture was introduced in 1990.

Project proposals for 1992 have been developed and approved through the provincial committees. To date, joint venture funding has been secured for 1992 freshwater wetlands and beaver pond management projects.

Eastern Habitat Joint Venture contributing partners in 1991 included: Wildlife Habitat Canada; Ducks Unlimited Canada; Ducks Unlimited Inc.; Corner Brook Pulp and Paper Limited; Canadian Wildlife Service; Newfoundland Wildlife Service; United States Fish and Wildlife Service; White Bay Central Development Association; Eagle River Development Association; St. Barbe Development Association; and Penguin Development Association.

J) PROTECTION

Poaching is increasing in most areas. In some districts, poaching is up by 30% over the previous year. The division is in the process of developing an Operation and Procedure Manual outlining all relevant policies and recommended action.

The division is developing a training unit within the Protection Section. Two district officers are taking on added responsibilities to train all protection staff on topics such as officer safety. Regional supervisors are taking on greater, provincial responsibilities for certain areas of administration or expertise.

The Wildlife Act and Regulations have been updated to include all amendments, recompiled and distributed to all staff.

K) ENVIRONMENTAL EDUCATION - PROJECT WILD

- *Background*

Behaviour, values and attitudes are very difficult to change. Any program aimed at fostering responsible behaviour must be long term; quick fixes do not work. It is important to focus on young people whose values, attitudes, and behaviour are not too entrenched. Through young people the message will reach parents and other adults.

The Wildlife Division decided to shift emphasis from providing information to performing long term education around 1983. The focus became getting environmental education integrated with the school system. Programs throughout North America were examined to identify the best ways of establishing environmental education programs in schools. This led to the adoption of Project Wild in 1985 as the primary vehicle for environmental education in the schools.

The goal of Project Wild is to assist learners of any age in developing awareness, knowledge, skills and commitment to result in informed decisions, responsible behaviour, and constructive actions concerning wildlife and the environment upon which all life depends.

The program has the following characteristics:

- Environmental education focusing on wildlife which is designed to be integrated with the school curriculum.
- Links with all major subject and skill areas in all grades but focusing now on K-6.
- Complementary to the existing curriculum - not replacement.
- Written by teachers and extensively tested
- Teachers get the material only by attending a one day inservice.
- Easily adapted to local conditions.
- Makes connection between what a student learns and how a student lives.
- Gives new perspective on familiar places and things.
- Fosters the idea that the environment is all around us not a special place that you visit occasionally.
- Activity Guides
  - 450 pages of activities.
  - French and English.
  - Over 120 teaching activities.
  - Cross indexed by subject, grade, skill, and topic.
  - Subject to regular updates

- *Status of Project Wild in the Province*

A planning committee was established in 1985 by the Wildlife Division and the Instructional Division of the Department of Education. It is comprised of members selected from within the educational system. The committee's job was to evaluate the suitability of Project Wild and to recommend a provincial implementation plan. The program was piloted for one year in 12 communities from Nain to St. Shotts. It is now approved by the Department of Education as supplementary resource material.

Two types of workshops are available for educators - a one day workshop for regular classroom teachers and a more intense two day workshop for training teacher leaders who would introduce others to Project Wild. Some workshops have been held, including a workshop for all primary teachers with the Avalon Consolidated Board. A determined effort to spread the program across the province will begin during winter 1991. However, a major impediment to implementation is the fiscal constraint limiting the availability of substitute teachers, which in turn prevents school boards from releasing regular teachers from their classrooms.

A Newfoundland and Labrador Project Wild Teachers Guide is now available. It will show teachers how Project Wild fits within the existing curriculum in practically every major subject area such as Language, Arts, Mathematics, Social Studies, and Science.

L) SALMONIER NATURE PARK

Salmonier Nature Park is a combination environmental education centre and zoological park. Its purpose is to provide a world class environmental education centre focusing on the natural history, especially the wildlife, of Newfoundland and Labrador and related human use past, present, and future; to provide a world class tourist destination specializing in environmentally sensitive recreation opportunities; and to provide a provincial centre for the rehabilitation of injured or orphaned wildlife.

First opened in 1978, Salmonier Nature Park has developed a strong reputation for providing valuable environmental education and recreation services especially to students and family groups. In addition to student/teacher visits, 20,000 to 30,000 other visitors come to the park each year.

The Park is open to the general public from the first Thursday in June to Labour Day. Earlier opening is not possible because a number of animals are nesting, giving birth, or with new young and as such are very sensitive to large numbers of people.

To improve deteriorating structures and to make the park's features more accessible to the public, the following major renovations have been made:

- A new boardwalk passing over the moose enclosure provides visitors with barrier-free viewing of the animals.
- A new mink enclosure was completed in the spring of 1991.
- A flight cage for rehabilitating birds of prey is under construction. The expected completion date is January 1, 1992.
- Renovation of the small animal room is now underway to convert it to a public display focusing on the interdependence of life.

M) WILDLIFE REHABILITATION

The division's role in rehabilitation is increasing as people's environmental sensitivity increases and the park becomes more widely known. Every year, a number of orphaned or injured animals are rehabilitated at the park and most are subsequently released. Those which are not released are maintained at the park or provided to similar education facilities throughout the country.

A new booklet entitled "Wildlife First Aid and Initial Care", intended primarily for the use of Wildlife Division field staff, has recently been completed and is now being field-tested.

N) EDUCATION PROGRAM

Six thousand to eight thousand school children visit the park each year with their teachers and classmates. This program includes pre and post visit activities that encourage the teachers to use the visit as an important learning event integrated with the school curriculum.

Three full-time and one part-time student are hired each summer to assist with the education and visitor services program. In addition to the education activities that occur at the park, a school visit program operates in the fall and winter focusing on specialized themes such as endangered species. Park education staff are also involved in province-wide projects such as the development of the pine marten and piping plover publications.

A full-colour poster and brochure promoting the park was produced in 1989 with funding assistance through the Department of Development.

O) NATIONAL WILDLIFE WEEK AND HABITAT 2000

Habitat 2000 is a project oriented program that is promoted through National Wildlife Week. It encourages school classes or other youth groups to undertake wildlife habitat enhancement projects. Each group can apply to the Canadian Wildlife Federation for funds up to $200 per project to assist them in purchasing materials and equipment. These programs are sponsored primarily by the Canadian Wildlife Federation and made available to the provinces through their fish and wildlife agencies.

The division's involvement with this program has been curtailed due to fiscal constraint. The division will purchase 400 kits to be made available to teachers on a request basis only. The availability of the kits will be advertised through the Newfoundland Teacher's Association Bulletin.

The division is also planning an exhibit for one of the major shopping malls in the city. Field staff throughout the province make a special effort to visit with schools throughout the week.

P) HUNTER EDUCATION PROGRAM

The Hunter Education Program has two major components: the voluntary classroom course; and the hunter capability test which is mandatory for big game hunters.

- *Hunter Education Course*

Presently, the hunter education course is delivered by about 30 voluntary instructors throughout the province. To date, 22,000 people have completed the voluntary course. A course curriculum and manual are developed.

- *Hunter Capability Testing*

The hunter capability test is administered by divisional staff. Eighty thousand people have passed the test. Since the inception of the hunter capability test and the hunter education program, the firearm accident rate has gone down by over 40%. The capability test started in 1977 and applies only to big game hunters.

It has been the intention of the Wildlife Division to expand the availability of the course by recruiting and training more volunteer instructors. Lack of funding has prevented the department from making the capability test mandatory for all first-time hunters.

Q) TRAPPER EDUCATION

A plan for Trapper Education has been developed in conjunction with the Labrador Community College and the two provincial trappers' associations. A Trapper Education and Furbearer Management Committee, involving division staff and the two provincial trappers' associations, was established in 1989 to assist the department in establishing a trapper education program and in evaluating a variety of management strategies.

New regulations generally conforming to national guidelines on humane trapping were passed in 1989.

R) PUBLICATIONS

- *Big Game Licence Application Guide*

The division anticipates the publication date for the Big Game Licence Application Guide to be January 1, 1991 to accompany the mailing of applications early in January.

- *Hunting Guide*

The Hunting Guide is the division's most important communications mechanism for hunters. One hundred thousand guides are distributed annually. The Guide is usually released in late July or early August and is available free with any game licence.

- *Trapper's Newsletter*

The Trapper's Newsletter is published annually in August or September. Five thousand copies are made available to trappers in the province and are free with every trapping licence sold.

- *Wildlife Brochure/Poster Series*

A new series of brochures and posters is under development. The first set of publications in this series focuses on endangered species in Newfoundland and Labrador. Publications about the Pine Marten were the first to be released. They will be followed this fiscal year by material about the Piping Plover, Peregrine Falcons, and Harlequin Ducks, respectively. The publication on Harlequins will be done in cooperation with the Canadian Wildlife Service.

S) Adventure Tourism Strategy

The division has been working with other departments, non-government organizations and the Economic Recovery Commission to develop an adventure tourism strategy for the province.

T) Fur Institute of Canada

The Fur Institute of Canada was created in 1983 based on the recommendations of provincial and federal governments to: address anti-fur protests; develop improved trapping systems; and develop trapper education standards. The department contributes financially to the administration and operation of the institute.

Member organizations include representatives from all components of the fur production industry. The institute has been instrumental in the development of humane trapping systems for arctic fox, mink, marten and beaver (work on other species continues); lobbying efforts in Europe to help increase favour in the economic community for Canadian fur products; a grade 8-12 school program to be made available during the fall of 1991; several instructors workshops on trapper education standards.

FUTURE GOALS/OBJECTIVES/TRENDS

A goal of the division is to have the Salmonier Nature Park recognized as a world class tourist destination focusing on environmentally sensitive recreation. To accomplish this goal, the division wishes to develop a 20 year development and management plan which will include:

- An extended season and 7 day per week operation.
- Improvements to the parking lot, gatehouse and washrooms.
- New animal displays including wolf, pine marten, and arctic hare.
- Public washrooms at the half way point of the trail.
- Continued improvement to the trail system to make it fully wheel-chair accessible.
- Development of hiking/cross-country ski trails into the Avalon wilderness area.

- Visitor centre modifications - gift shop, presentation room, redesigned entrance, more exhibits directed towards promoting efficacy.
- A self guiding trail system in which hikers use a brochure and cassette tapes to provide information along the route.
- Scheduled special events (such as, small scale musical festivals, puppet theatre for kids, guest expert days, etc.).
- Fostering of commercial enterprise outside the park to extend service to the public.
- Improved promotion and marketing.
- The promotion of the park as an important link between Conception Bay and St. Mary's Bay. The park is ideally located to serve as a networking hub for natural and cultural heritage tourism.

The division wishes to expand the Hunter Education Program making it readily available anywhere in the province. The program is seen as a long term solution to many of the problems associated with wildlife protection and management. When the delivery system is widely available, the course could be made mandatory and the hunter capability test could be incorporated into the course. This would reduce the amount of staff time presently required to conduct the test. This expansion will rely on developing a core of volunteer instructors and on forming partnerships with corporate sponsors, non-government organizations and educational institutions such as the community colleges. This expansion of the hunter education course is coupled with the capital development of a system of shooting ranges and regional education centres around the province. The department recently approved this approach, in principle.

PUBLIC RELATIONS

Mr. John Doody - Director (Acting)

INTRODUCTION

The Public Relations Division is responsible for planning, developing and implementing a public relations program for the Department of Environment and Lands and is responsible for providing advice and guidance to senior management on programs, policies and initiatives affecting public opinion. The public relations personnel recommend appropriate courses of action for programs of a policy, legislative and regulatory nature and develops and implements public education/ information programs to be carried out according to Cabinet directives. Staff consists of a director, a public relations specialist, and a secretary.

Public relations personnel promote the public image of the organization and provide for two-way communication between the public and the Department. Arrangements are made for department officials to participate as speakers, panellists, and seminar participants. News releases are researched and written for distribution to the provincial media. The Division also reviews and distributes magazines and periodicals for the quality and timeliness of information published.

The public relations specialist is responsible for supplying articles and other information to The Link, which is the Government of Newfoundland and Labrador's quarterly newsletter, and is responsible for providing editorial copy to magazines and journals outside the Department upon request.

PROGRAMS AND SERVICES

A) PUBLIC INFORMATION SERVICE

An information service is provided to the public through publication dissemination, a video-lending system, and personal and telephone interviews. On average, 2000 requests for information are responded to during one year, including those responded to in writing, by telephone, and through walk-in requests.

B) STOP TRASHING OUR PROVINCE (STOP) PROGRAM

Mr. Shane Mahoney, chairperson of the STOP committee, addressed numerous community groups and schools during the year on the topic of environmental stewardship. The department received approximately 70 calls on the toll free line used to report violations of environmental laws and regulations. Reports dealt mainly with indiscriminant dumping and littering. The toll free number to call is **1-800-563-5050**.

C) MEDIA MANAGEMENT

A major part of the public relations function is to manage media requests effectively. During the course of a year, the Division accommodates requests for information and interviews from both the print and electronic media. While the majority of calls come from local media, requests are also handled on behalf of national media. An average of 200-250 requests are handled over a one year period through telephone interviews, office interviews and on-site live interviews, all of which are organized with Department officials through the public relations office.

D) NEWFOUNDLAND AND LABRADOR ENVIRONMENTAL AWARDS PROGRAM

The Newfoundland and Labrador Environmental Awards Program which began in 1990 is administered by the Newfoundland and Labrador Women's Institute and sponsored by the Department of Environment and Lands. It gives recognition to people from all walks of life who have contributed in a meaningful way to the preservation, protection and restoration of our environment. The public relations office is responsible for the management of this program from the Department's perspective.

The aim of the program is to help educate, inform and encourage all citizens to play an active part in the present and future environmental health of our province. Nominations are invited every year for each of the six categories outlined in the program: 1. Individual, 2. Citizen's Group or Organization, 3. Education, 4. Youth, 5. Business, and 6. Municipal. An Awards Selection Committee will select the winners and each receives a plaque at a ceremony held during Environment Week each year.

Members of the Awards Selection Committee include professionals in the environment field, academicians and individuals having a vested interest in the Environmental Awards Program. Representing the educational, not-for-profit and government fields, the members have considerable experience in evaluating projects and programs of this nature.

During the 1990/91 year, brochures containing nomination forms were mailed out to approximately 600 individuals and groups. Approximately 40 nominations were received, with no nominations being received for the Municipal Category. Awards were given out to the following:

Individual - Mr. Donald Blackmore; **Citizen's Group or Organization** - Quidi Vidi/Rennies River Development Foundation; **Education** - Mr. Charles Menchions; **Youth** - Challenge '89 Youth Group, Black Tickle, Labrador; **Business** - Nova Recycling

With increased awareness of the program, the public relations office and the Women's Institutes are hoping that more people will be encouraged to get involved and help recognize the many Newfoundlanders and Labradorians who have contributed to environmental excellence in our province.

APPENDIX

The following table provides a comparison of actual expenditure by program for both current account and capital account for the fiscal years 1989-90 and 1990-91 as included in the Public Accounts of the Province.

PROGRAM FUNDING SUMMARY Gross Expenditures				
	Current Account		Capital Account	
Program	1989-1990	1990-1991	1989-1990	1990/1991
Executive & Support Services	1,036,200	2,041,900	Nil	Nil
Environmental Management & Control	5,653,300	4,366,000	47,000	Nil
Provincial Land Management	3,825,000	4,342,000	74,400	41,000
Parks	4,155,400	4,419,100	985,300	747,000
Wildlife	6,067,400	6,201,400	31,800	39,300
TOTAL:	20,737,300	21,370,400	1,138,500	827,300

Also provided in the table below is a departmental summary indicating the actual expenditure for those fiscal years indicated.

SUMMARY			
Fiscal Year	Current Account	Capital Account	Total
1989-1990	20,737,300	1,138,500	21,875,800
1990-1991	21,370,400	827,300	22,197,700

NOTE: All figures rounded to $100.